# SLV-ED225/ED323/ED825/ED828/ED925/ED929/ EZ121/EZ424/EZ725/EZ727

## RMT-V408/V408A/V409

# SERVICE MANUAL

*Middle East Model*

*SLV-ED323ME/ED323SG/ED828ME/ED828SG*

*E Model*

*SLV-ED225PS/ED825PS/ED925PS*

*Hong Kong Model*

*SLV-ED929MI*

*Australia Model*

*SLV-EZ121AZ/EZ424AZ/ EZ725AZ/EZ727AZ*

VHS Hi-Fi G-CODE®

Photo: SLV-ED825PS
RMT-V408

TS-10 MECHANISM

**Refer to the SERVICE MANUAL of VHS MECHANICAL ADJUSTMENT MANUAL VII for MECHANICAL ADJUSTMENTS. (9-921-790-11)**

## SPECIFICATIONS

### System

Colour system
- ED225/ED323/ED825/ED828/ED925/ED929: PAL, MESECAM, NTSC 3.58, NTSC 4.43
- EZ727: PAL, NTSC 3.58, NTSC 4.43
- EZ121/EZ424/EZ725: PAL, NTSC 4.43

TV system
- ED929: B/G, D/K, I, NTSC-M
- ED225/ED323/ED825/ED828/ED925: B/G, D/K, I
- EZ121/EZ424/EZ725/EZ727: B/G, B/B

Channel coverage
- B/G: VHF E2 to E12/UHF E21 to E69/CATV S01 to S05, S1 to S41
- B/B: VHF R1 to R12/UHF R21 to R69
- D/K: VHF R1 to R12/UHF R21 to R69
- I: VHF SA4 to SA13/UHF B21 to B69/CATV S01 to S05,S1 to S41

RF output signal
- UHF channels 21 to 69 (G, I, K, B, M)
- UHF channels 28 to 69 (B/B)

Aerial out
- 75-ohm asymmetrical aerial socket

Tape speed
- ED929:
  - SP: PAL 23.39 mm/s (recording/playback)
  - NTSC 33.35 mm/s (recording/playback)
  - LP: PAL 11.70 mm/s (recording/playback)
  - NTSC 16.67 mm/s (playback only)
  - EP: NTSC 11.12 mm/s (recording/playback)
- ED225/ED323/ED825/ED828/ED925/EZ727:
  - SP: PAL 23.39 mm/s (recording/playback)
  - NTSC 33.35 mm/s (recording (Line input only)/ playback)
  - LP: PAL 11.70 mm/s (recording/playback)
  - NTSC 16.67 mm/s (playback only)
  - EP: NTSC 11.12 mm/s (recording (Line input only)/ playback)
- EZ121/EZ424/EZ725:
  - SP: PAL 23.39 mm/s (recording/playback)
  - NTSC 33.35 mm/s (playback only)
  - LP: PAL 11.70 mm/s (recording/playback)
  - NTSC 16.67 mm/s (playback only)
  - EP: NTSC 11.12 mm/s (playback only)

Maximum recording/playback time
- 10 hrs. in LP mode (with E300 tape)

Rewind time
- Approx. 1 min.(with E180 tape)

### Inputs and outputs

LINE IN 1/LINE-2 IN
- VIDEO IN, phono jack (1)
- Input signal: 1 Vp-p, 75 ohms, unbalanced, sync negative
- AUDIO IN, phono jack (2)
- Input level: 327 mVrms
- Input impedance: more than 47 kilohms

### General

Power requirements
- ED225/ED323/ED825/ED828/ED925/ED929: 110 – 240 V AC, 50/60 Hz
- EZ121/EZ424/EZ725/EZ727: 220 – 240 V AC, 50 Hz

Power consumption
- ED225/ED323/EZ121/EZ424: 15 W
- ED825/ED828/ED925/ED929/EZ725/EZ727: 17 W
- 3 W (POWER SAVE is set to ON, minimum)

Operating temperature
- 5 °C to 40 °C

Storage temperature
- –20 °C to 60 °C

— Continued on next page —

# VIDEO CASSETTE RECORDER

SONY®

Dimensions including projecting parts and controls (w/h/d)
ED225/ED323/EZ121/EZ424:
Approx. 360 × 95 × 252 mm
ED825/ED828/ED925/ED929/EZ725/EZ727:
Approx. 430 × 96 × 251 mm
Mass
ED225/ED323/EZ121/EZ424: Approx. 2.8 kg
ED825/ED828/ED925/ED929/EZ725/EZ727:
Approx. 3.1 kg

### Supplied accessories

Remote commander (1)
R6 (size AA) batteries (2)
Aerial cable (1)
ED323ME/ED828ME: Plug adaptor (1)

Design and specifications are subject to change without notice.

- Abbreviation
  AUS : Australia model
  HK : Hong Kong model
  ME : Middle East model

- Hi-Fi model: ED825/ED828/ED925/ED929/EZ725/EZ727
  Mono model: ED225/ED323/EZ121/EZ424

## SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

**SAFETY-RELATED COMPONENT WARNING!!**

**COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.**

## TABLE OF CONTENTS


### Important Service Guide

◆ Mode Switch (Program Switch) Assembly Point ····· 4
◆ How to eject the cassette tape
(If the unit does not operate on condition that tape is inserted into housing ass'y) ····· 4

### 1. General

Getting Started
Index to parts and controls ····· 1-1
Step 1 : Unpacking ····· 1-2
Step 2 : Setting up the remote commander ····· 1-2
Step 3 : Connecting the VCR ····· 1-3
Step 4 : Setting up the VCR with the Auto Set Up function 1-3
Step 5 : Setting the clock ····· 1-4
Step 6 : Selecting the TV system ····· 1-5
Selecting a language ····· 1-5
Presetting channels ····· 1-5
Changing/disabling programme positions ····· 1-6
Basic Operations
Playing a tape ····· 1-7
Recording TV programmes ····· 1-8
Recording TV programmes using the Easy Timer ····· 1-9
Recording TV programmes using the G-CODE system ·· 1-10
Recording TV programmes using the timer ····· 1-11
Additional Operations
Playing/searching at various speeds ····· 1-12
Setting the recording duration time ····· 1-12
Checking/changing/cancelling timer settings ····· 1-12
Recording stereo and bilingual programmes ····· 1-13
Searching using the index function ····· 1-13
Adjusting the picture ····· 1-14
Reducing the VCR's power consumption ····· 1-14
Changing menu options ····· 1-14
Editing
Connecting to a VCR or stereo system ····· 1-15
Basic editing ····· 1-15
Additional Information
Troubleshooting ····· 1-15
Index ····· 1-16

### 2. Disassembly

2-1 Mono Models
2-1-1 Case Upper ····· 2-1
2-1-2 Cover Bottom ····· 2-1
2-1-3 Ass'y-Panel Front ····· 2-2
2-1-4 Ass'y Main Board, Deck ····· 2-3
2-2 Hi-Fi Models
2-2-1 Case Upper ····· 2-4
2-2-2 Cover Bottom ····· 2-4
2-2-3 Ass'y-Panel Front ····· 2-5
2-2-4 Jack Board ····· 2-5
2-2-5 Deck, Main Board ····· 2-6

### 3. P.C.Boards

3-1 Main PCB (AUS) ····· 3-1
3-2 Main PCB (E, HK, ME) ····· 3-1
3-3 Function PCB (Hi-Fi model) ····· 3-1

### 4. Schematic Diagrams

◆ Block Identification of Main PCB ····· 4-1
4-1 S.M.P.S. (AUS) ····· 4-1
4-2 S.M.P.S. (E, HK, ME) ····· 4-2
4-3 Power ····· 4-3
4-4 System Control/Servo ····· 4-4
4-5 Audio/Video ····· 4-5
4-6 Hi-Fi (Hi-Fi model) ····· 4-6
4-7 TM-Block ····· 4-7
4-8 OSD/VPS/PDC ····· 4-8
4-9 A2/NICAM (ED925/ED929/EZ725/EZ727) ····· 4-21
4-10 Input-Output (RCA Jack) ····· 4-10
4-11 Sub (Hi-Fi model) ····· 4-11
◆ Waveform ····· 4-12
◆ Voltage Table ····· 4-17

### 5. Alignment and Adjustment

5-1 Reference ····· 5-1
5-1-1 Location of adjustment button of remote control ····· 5-1
5-1-2 Test point location for adjustment mode setting (EZ121/EZ424) ····· 5-1
5-1-3 Test point location for adjustment mode setting (ED225/ED323) ····· 5-2
5-1-4 SW7T21 (TEST) location for adjustment mode setting (ED825/ED828/ED925/ED929/EZ725/EZ727) ····· 5-4
5-2 Mechanical Adjustment ····· 5-4
5-2-1 The number and position of test point ····· 5-5
5-2-2 ACE Head Position (X-Point) Adjustment ····· 5-5
5-3 Head Switching Point Adjustment ····· 5-6
5-4 NVRAM Option Setting ····· 5-7

### 6. Repair Parts List

6-1 Exploded Views ····· 6-1
6-1-1 Instrument Assembly (Mono model) ····· 6-2
6-1-2 Instrument Assembly (Hi-Fi model) ····· 6-3
6-1-3 Mechanical Parts (Top Side) ····· 6-4
6-1-4 Mechanical Parts (Bottom Side) ····· 6-5
6-2 Electrical Parts List ····· 6-6


- Abbreviation
  AUS : Australia model
  HK : Hong Kong model
  ME : Middle East model

- Hi-Fi model: ED825/ED828/ED925/ED929/EZ725/EZ727
  Mono model: ED225/ED323/EZ121/EZ424

# IMPORTANT SERVICE GUIDE

## ◆ MODE SWITCH (PROGRAM SWITCH) ASSEMBLY POINT

1) When installing the ass'y deck on the Main PCB, be sure to align the assembly point of mode switch.

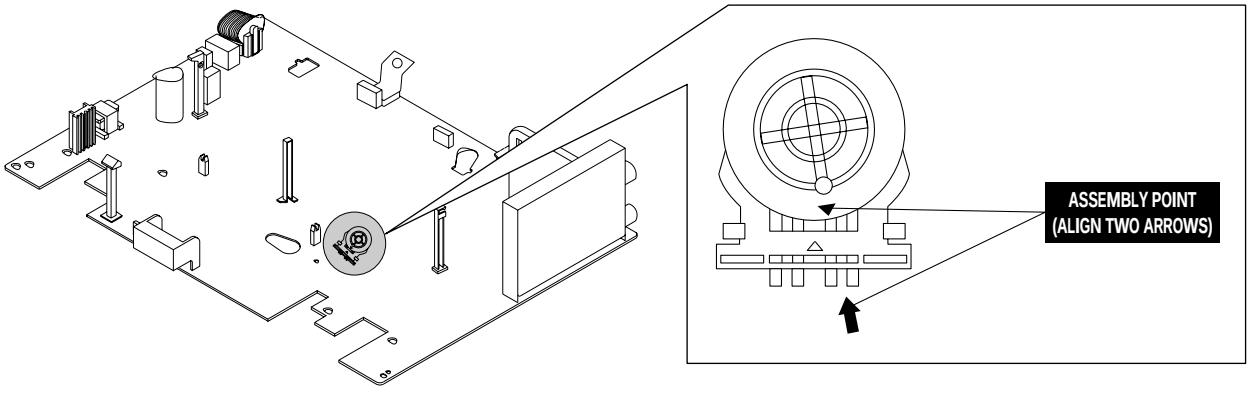



Fig. 1

## ◆ HOW TO EJECT THE CASSETTE TAPE
## (If the unit does not operate on condition that tape is inserted into housing ass'y)

1) Turn the Gear Worm ❶ clockwise in the direction of arrow with screw driver. (See Fig. 2)
   (Other method ; Remove the screw of Motor Load Ass'y, Separate the Motor Load Ass'y)
2) When Slider S, T are approached in the position of unloading, rotate holder Clutch counterclockwise after inserting screw driver in the hole of frame's bottom in order to wind the unwiunded tape. (Refer to Fig. 3)
   (If you rotate Gear Worm ❶ continuously when tape is in state of unwinding, you may cause a tape contamination by grease and tape damage. Be sure to wind the unwiunded tape in the state of set horizontally.)
3) Rotate Gear Worm ❶ clockwise using screw driver again up to the state of eject mode and then pick out the tape. (Refer to Fig. 2)

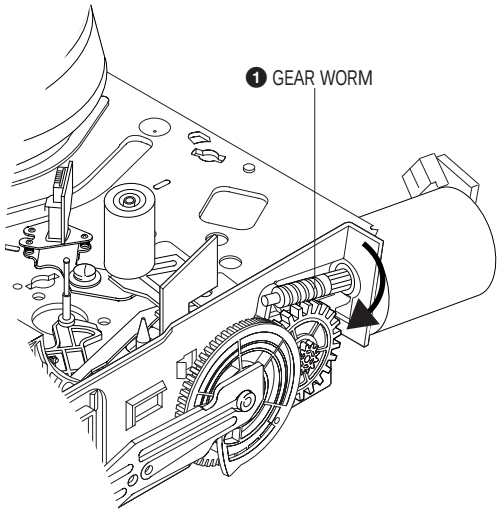



Fig. 2

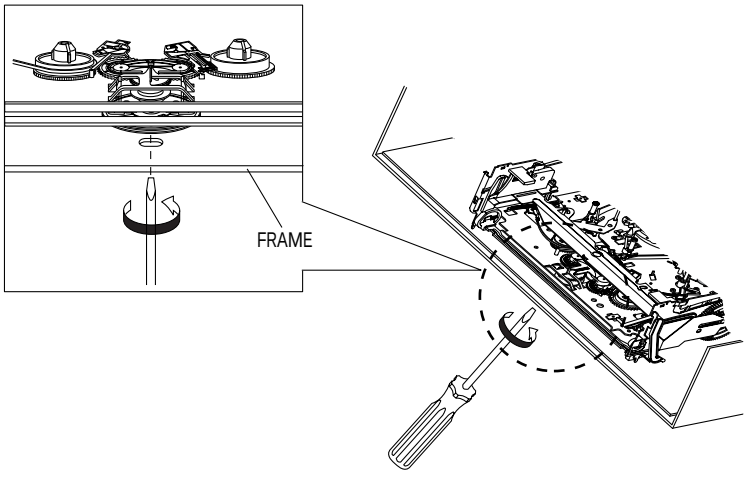



Fig. 3

# 1. GENERAL

This section is extracted from SLV-ED929MI/ED925PS/ED828ME/ED828SG/ED825PS/ED323ME/ED323SG/ED225PS instruction manual. (3-073-156-11)

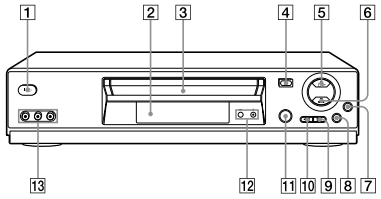


## Index to parts and controls

Refer to the pages indicated in parentheses ( ) for details.

### Front panel

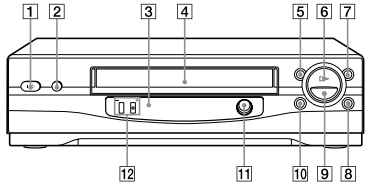
**For SLV-ED929MI, ED925PS, ED828ME/SG and ED825PS**




1 I/⏻ ON/STANDBY switch
2 Remote sensor (11)
3 Tape compartment
4 ⏏ EJECT button (30)
5 ▷ PLAY button*1 (30) (48)
6 ■ STOP button*1 (17) (30) (62)
7 ● REC (record) button (33) (49) (62)
8 ❚❚ PAUSE button (30) (41) (62)
9 ▶▶ FF (fast-forward) button (30) (48)
10 ◀◀ REW (rewind) button (30) (48)
11 EASY TIMER (36)
12 PROGRAM/TRACKING +/ buttons*1 (37) (56)
13 LINE-2 IN VIDEO/AUDIO L/R (left/right) jacks*2 (60) (61)

*1 The ▷ PLAY, ■ STOP and PROGRAM/TRACKING + buttons have a tactile dot.
*2 not available on SLV-ED825PS

**For SLV-ED323ME/SG and ED225PS**




1 I/⏻ ON/STANDBY switch
2 ⏏ EJECT button (30)
3 Remote sensor (11)
4 Tape compartment
5 ◀◀ REW (rewind) button (30) (48)
6 ▷ PLAY button (30) (48)
7 ▶▶ FF (fast-forward) button (30) (48)
8 ● REC (record) button (33) (49) (62)
9 ■ STOP button (17) (30) (62)
10 ❚❚ PAUSE button (30) (41) (62)
11 EASY TIMER (36)
12 PROGRAM/TRACKING +/ buttons* (37) (56)

* The PROGRAM/TRACKING + button has a tactile dot.

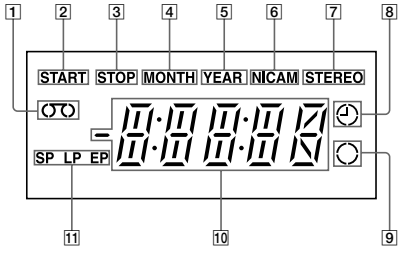
*continued*







### Display window

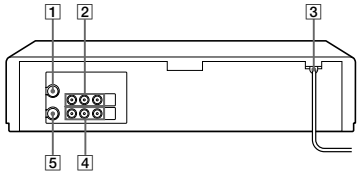



1 Tape indicator
2 START indicator (37)
3 STOP indicator (37)
4 MONTH indicator (40)
5 YEAR indicator
6 NICAM indicator*1 (53)
7 STEREO indicator*2 (52)
8 Timer indicator (39) (43) (46)
9 Recording indicator (33)
10 Time counter/clock/line/programme position indicator (31) (32) (62)
11 Tape speed indicators (32) (38)

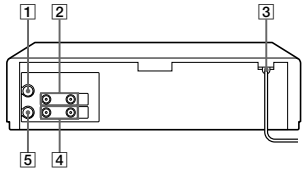
*1 SLV-ED929MI and ED925PS only
*2 not available on SLV-ED323ME/SG and ED225PS

### Rear panel

**For SLV-ED929MI, ED925PS, ED828ME/SG and ED825PS**




**For SLV-ED323ME/SG and ED225PS**

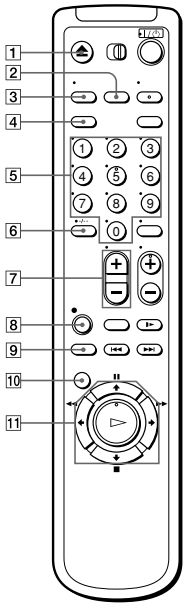



1 ℸ (in from antenna) connector (13)
2 LINE IN 1 AUDIO R/L/VIDEO (audio right/audio left/video) jacks*1 (61)
LINE IN 1 AUDIO/VIDEO jacks*2 (60)
3 Mains lead (13)
4 LINE OUT AUDIO R/L/VIDEO (audio right/audio left/video) jacks*1
LINE OUT AUDIO/VIDEO jacks*2 (14)
5 ⍈ (out to tv) connector (13)

*1 SLV-ED929MI, ED925PS, ED828ME/SG and ED825PS only
*2 SLV-ED323ME/SG and ED225PS only

*continued*

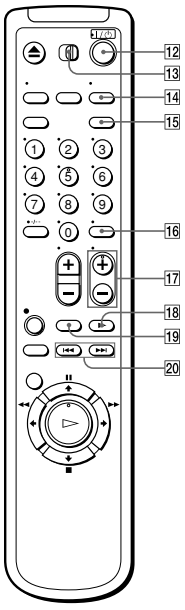
### Remote commander




1 ⏏ EJECT button (30)
2 INPUT SELECT button (32) (45) (62)
3 TV/VIDEO button *(for TV)*
4 CLEAR button (31) (42) (50)
5 Programme number buttons* (42)
6 -/-- (ten digit) button
7 VOL (volume) +/ buttons
8 ● REC (record) button (33) (49)
9 REC SPEED (recording speed) button (32)
10 MENU button (21) (50)
11 ❚❚ PAUSE/↑ button (21) (30)
■ STOP/↓ button (21) (30)
◀◀ REW (rewind)/← button (21) (30) (48)
▶▶ FF (fast-forward)/→ button (21) (30) (48)
▷ PLAY/OK button* (21) (30) (48)

* The ▷ PLAY, AUDIO MONITOR, number 5 and PROG + buttons have a tactile dot.






12 I/⏻ (on/standby) switch (43)
13 TV/VIDEO remote control switch (11)
14 AUDIO MONITOR button*1*2 (52)
15 G-CODE button*3 (42)
16 DISPLAY button (31) (33)
17 PROG (programme) +/ buttons*1 (34)
18 ▮▶ SLOW button (48)
19 ×2 button (48)
20 ⏮◀◀ / ▶▶⏭ INDEX SEARCH buttons (55)

*1 The ▷ PLAY, AUDIO MONITOR, number 5 and PROG + buttons have a tactile dot.
*2 not available on SLV-ED323ME/SG and ED225PS
*3 SLV-ED929MI only

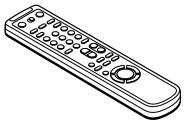




## Step 1 : Unpacking

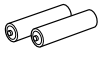
Check that you have received the following items with the VCR:

Remote commander

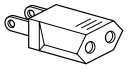


Aerial cable

R6 (size AA) batteries



Plug adaptor (SLV-ED828ME and ED323ME only)



### Check your model name

The instructions in this manual are for the 8 models: SLV-ED929MI, ED925PS, ED828ME/SG, ED825PS, ED323ME/SG and ED225PS. Check your model name by looking at the rear panel of your VCR. SLV-ED929MI is the model used for illustration purposes. Any difference in operation is clearly indicated in the text, for example, "SLV-ED929MI only."

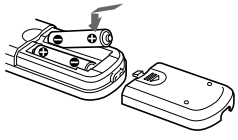


## Step 2 : Setting up the remote commander

### Inserting the batteries

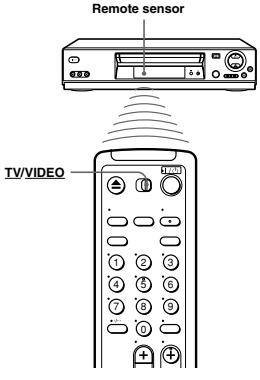
Insert two R6 (size AA) batteries by matching the + and on the batteries to the diagram inside the battery compartment.

Insert the negative ( ) end first, then push in and down until the positive (+) end clicks into position.



### Using the remote commander

You can use this remote commander to operate this VCR and a Sony TV. Buttons on the remote commander marked with a dot ( ) can be used to operate your Sony TV. If the TV does not have the symbol near the remote sensor, this remote commander will not operate the TV.




| To operate | Set TV/VIDEO to |
|---|---|
| the VCR | VIDEO and point at the remote sensor at the VCR |
| a Sony TV | TV and point at the remote sensor at the TV |

*continued*

*Step 2 : Setting up the remote commander (continued)*

**Notes**

With normal use, the batteries should last about three to six months.

If you do not use the remote commander for an extended period of time, remove the batteries to avoid possible damage from battery leakage.

Do not use a new battery together with an old one.

Do not use different types of batteries together.

Some buttons may not work with certain Sony TVs.

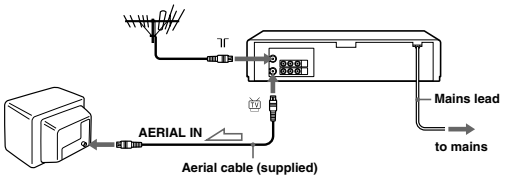


# Step 3 : Connecting the VCR



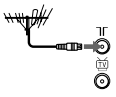
Connect the aerial to your VCR and TV as shown below to watch TV programmes and VCR pictures on your TV. In addition, if your TV has audio/video (A/V) input jacks, we recommend you connect the VCR to your TV using an audio/video cable to get a better picture and sound.

### Connecting the aerial

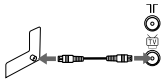



: Signal flow

**1** Disconnect the aerial cable from your TV and connect it to ⅄ on the rear panel of the VCR.



**2** Connect ⍞ of the VCR and the aerial input of your TV using the supplied aerial cable.



**3** Connect the mains lead to the mains.

**Note**

When you connect the VCR and your TV only with an aerial cable, you have to tune your TV to the VCR (see page 15).

*continued*



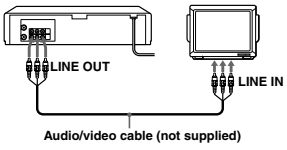
*Step 3 : Connecting the VCR (continued)*

### Additional connections

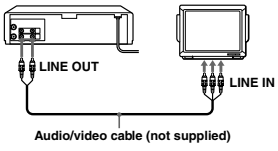
**To a TV that has audio/video input jacks**

This additional connection improves picture and sound quality. Connect the TV as shown on the right.

**For SLV-ED929MI, ED925PS, ED828ME/SG and ED825PS**

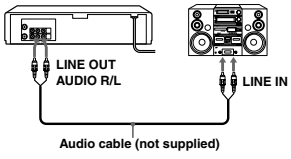



**For SLV-ED323ME/SG and ED225PS**




**To a stereo system (not available on SLV-ED323ME/SG and ED225PS)**

You can improve sound quality by connecting a stereo system to the LINE OUT AUDIO R/L jacks as shown on the right.




**Note**

To play a tape in stereo, you must connect your VCR either to a TV with audio/video input jacks or to a stereo system as shown on above right.



# Step 4 : Setting up the VCR with the Auto Set Up function



Before using the VCR for the first time, set up the VCR using the Auto Set Up function. With this function, you can set the language for the on-screen display and TV channels automatically.

**1** Turn on your TV and set it to the video channel.

Tune the TV to channel 51 (for SLV-ED929MI, ED925PS, ED825PS and ED225PS) or 32 (for SLV-ED828ME/SG and ED323ME/SG) (the initial RF channel for this VCR). Refer to your TV manual for TV tuning instructions. If the picture does not appear clearly, see "To change the RF channel" on page 17.

**2**


Connect the mains lead to the mains.

The VCR automatically turns on.

**For SLV-ED929MI, ED925PS, ED825PS and ED225PS**

The message for the Auto Set Up function appears on the TV screen.

**For SLV-ED828ME/SG and ED323ME/SG**

The LANGUAGE SET menu appears on the TV screen.

Press ←/→ to select the desired language, ENGLISH or ARABIC, then press OK.

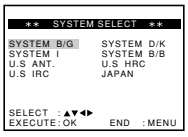
The message for the Auto Set Up function appears.

*continued*

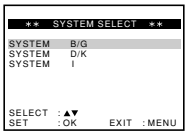
**3** Press OK.

The SYSTEM SELECT menu appears.

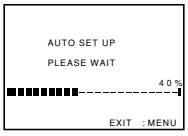
**For SLV-ED929MI**




**For SLV-ED925PS, ED828ME/SG, ED825PS, ED323ME/SG and ED225PS**




**4** Press ↑/↓/←/→ to select the appropriate TV system, then press OK.




The VCR starts searching for all of the receivable channels and presets them (in the appropriate order for your local area).

If you want to change the order of the channels or disable unwanted programme positions, see "Changing/disabling programme positions" on page 25.

After the search is complete, the clock setting menu appears. See "Setting the clock" on page 18.



**To cancel the Auto Set Up function**

Press MENU.

**To change the RF channel**

If the picture does not appear clearly on the TV, change the RF channel on the VCR and TV. Select INSTALLATION from the menu, then press ↑/↓ to highlight VCR OUTPUT CH and press →. Select the RF channel by pressing the ↑/↓ buttons. Then, tune the TV to the new RF channel so that a clear picture appears.

**Tip**

If you want to change the language for the on-screen display from the one preset in the Auto Set Up function, see page 21.*

**Notes**

Whenever you operate the Auto Set Up function, some of the settings (timer, etc.) will be reset. If this happens, you have to set them again.

Auto preset starts automatically only when you plug in the mains lead for the first time after you purchase the VCR.

After using the Auto Set Up function, the LANGUAGE SET menu* does not appear automatically when you connect the mains lead again. If you want to use the Auto Set Up function again, press MENU, then press ↑/↓/←/→ to highlight INSTALLATION and press OK. Press ↑/↓ to highlight AUTO SET UP, then repeat all procedures from step 3.

Auto preset can be performed by pressing ■ STOP on the VCR continuously for 5 seconds or more with no tape inserted.

* SLV-ED828ME/SG and ED323ME/SG only





## Step 5 : Setting the clock

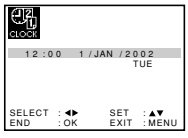
You must set the time and date on the VCR to use the timer features properly.

**Before you start**

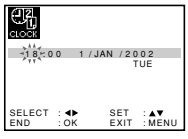
Turn on the VCR and the TV.
Set the TV to the video channel.
Refer to "Index to parts and controls" for button locations.

**1** MENU

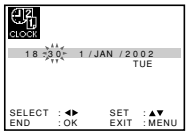
Press MENU, then press ↑/↓/←/→ to highlight CLOCK SET and press OK.




**2** Press ↑/↓ to set the hour.



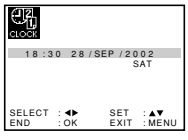

**3** Press → to select the minutes and set the minutes by pressing ↑/↓.






**4** Set the day, month, and year in sequence by pressing → to select the item to be set, and press ↑/↓ to select the digits, then press →.

The day of the week is set automatically.




**5** MENU

Press MENU to exit the menu.

**Tip**

To change the digits while setting, press ← to return to the item to be changed, and select the digits by pressing ↑/↓.

## Step 6 : Selecting the TV system

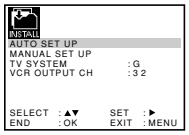
You must select the appropriate TV system for your area.

**Before you start**É

Turn on the VCR and the TV.
Set the TV to the video channel.
Refer to "Index to parts and controls" for button locations.

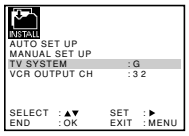
**1** MENU

Press MENU, then press ↑/↓/←/→ to highlight INSTALLATION and press OK.




**2**

Press ↑/↓ to highlight TV SYSTEM, then press →.




**3**

Press → to select the appropriate TV system.

| Select | For |
|---|---|
| G | the B/G TV system |
| K | the D/K TV system |
| I | the I TV system |
| B* | the B/B TV system |
| M* | the U.S ANT., U.S HRC, U.S IRC and JAPAN TV systems |

**4** MENU

Press MENU to exit the menu.

* SLV-ED929MI only



## Selecting a language (SLV-ED828ME/SG and ED323ME/SG only)



You can change the on-screen display language from the one you selected with the Auto Set Up function.

**Before you start**É

Turn on the VCR and the TV.
Set the TV to the video channel.
Refer to "Index to parts and controls" for button locations.

**1** MENU

Press MENU, then press ↑/↓/←/→ to highlight LANGUAGE SET and press OK.

**2**

Press ←/→ to highlight the desired language, ENGLISH or ARABIC, then press OK.



## Presetting channels

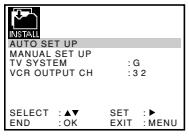
If some channels could not be preset using the Auto Set Up function, you can preset them manually.

**Before you start**É

Turn on the VCR and the TV.
Set the TV to the video channel.
Refer to "Index to parts and controls" for button locations.

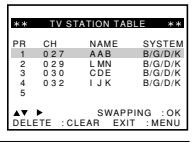
**1** MENU

Press MENU, then press ↑/↓/←/→ to highlight INSTALLATION and press OK.




**2**

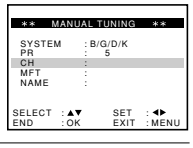
Press ↑/↓ to highlight MANUAL SET UP, then press →.


** TV STATION TABLE **
PR CH NAME SYSTEM
1 027 AAB B/G/D/K
2 029 LMN B/G/D/K
3 030 CDE B/G/D/K
4 032 IJK B/G/D/K
5
▲▼ ▶ SWAPPING : OK
DELETE : CLEAR EXIT : MENU

**3**

Press ↑/↓ to highlight the row which you want to preset, then press →.

To display other pages for programme positions 6 to 80, press ↑/↓ repeatedly.

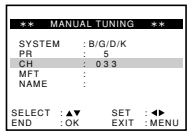






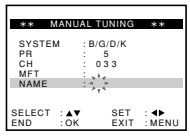

**4**

Press ←/→ repeatedly until the channel you want is displayed. Select the appropriate TV system, if necessary.




**5**

Press ↑/↓ to highlight NAME, then press →.

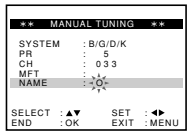



**6**

Enter the station name.

**1** Press ↑/↓ to select a character.
Each time you press ↑, the character changes as shown below.

**A → B → É → Z → 0 → 1 → É → 9 → A**




**2** Press → to set the next character.
The next space flashes.
To correct a character, press ←/→ until the character you want to correct flashes, then reset it.

You can set up to 4 characters for the station name.

**7**

Press OK to confirm the station name.

**8** MENU

Press MENU to exit the menu.

*continued*

**If the picture is not clear**

If the picture is not clear, you may use the Manual Fine Tuning (MFT) function. After step 4, press ↑/↓ to select MFT. Press ←/→ to get a clear picture, then press MENU to exit the menu.

**Notes**

If the TV sound is distored or noisy, select the appropriate TV system (ÒGÓ, ÒKÓ, ÒIÓ, ÒBÓ* or ÒMÓ*) for your area (see page 20).

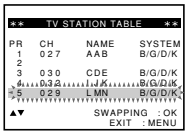
When adjusting MFT, the menu may become difficult to read due to interference from the picture being received.

* SLV-ED929MI only





**4** Press OK, then press ↑/↓ to move to the desired programme position.




**5** Press OK to confirm the setting.

**6** To change the programme position of another station, repeat steps 3 through 5.

**7** MENU — Press MENU to exit the menu.

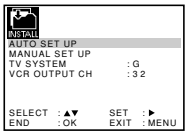
### Disabling unwanted programme positions

After presetting channels, you can disable unused programme positions. The disabled positions will be skipped later when you press the PROG +/ buttons.

**Before you start**É

Turn on the VCR and the TV.
Set the TV to the video channel.
Refer to ÒIndex to parts and controlsÓ for button locations.

**1** MENU — Press MENU, then press ↑/↓/←/→ to highlight INSTALLATION, and press OK.






## Changing/disabling programme positions



After setting the channels, you can change the programme positions as you like. If any programme positions are unused or contain unwanted channels, you can disable them.

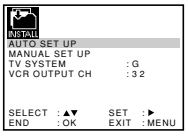
You can also change the station names. If the station names are not displayed, you can enter them manually.

### Changing programme positions

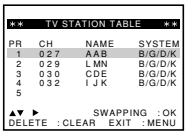
**Before you start**É

Turn on the VCR and the TV.
Set the TV to the video channel.
Refer to ÒIndex to parts and controlsÓ for button locations.

**1** MENU — Press MENU, then press ↑/↓/←/→ to highlight INSTALLATION and press OK.

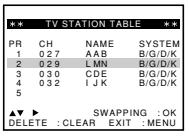



**2** Press ↑/↓ to highlight MANUAL SET UP, then press →.




**3** Press ↑/↓ to highlight the row containing the programme position you want to change.

To display other pages for programme positions 6 to 80, press ↑/↓ repeatedly.

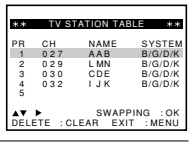



*continued*



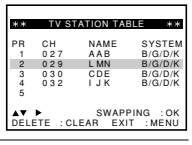


**2** Press ↑/↓ to highlight MANUAL SET UP, then press →.



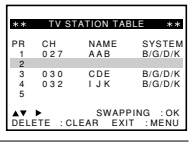

**3** Press ↑/↓ to highlight the row which you want to disable.

To display other pages for programme positions 6 to 80, press ↑/↓ repeatedly.




**4** CLEAR — Press CLEAR.

The selected row will be cleared as shown on the right.




**5** Repeat steps 3 and 4 for any other programme positions you want to disable.

**6** MENU — Press MENU to exit the menu.

**Note**

Be sure to select the programme position you want to disable correctly. If you disable a programme position by mistake, you need to reset that channel manually.

*continued*

### Changing the station names

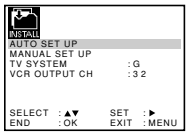
You can change or enter the station names (up to 4 characters).

**Before you start**É

Turn on the VCR and the TV.
Set the TV to the video channel.
Refer to "Index to parts and controls" for button locations.

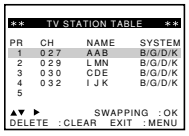
**1** MENU

Press MENU, then press ↑/↓/←/→ to highlight INSTALLATION and press OK.




**2**

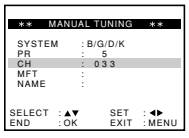
Press ↑/↓ to highlight MANUAL SET UP, then press →.


** TV STATION TABLE **
PR CH NAME SYSTEM
1 027 AAB B/G/D/K
2 029 LMN B/G/D/K
3 030 CDE B/G/D/K
4 032 I J K B/G/D/K
5
▲▼ ▶ SWAPPING : OK
DELETE : CLEAR EXIT : MENU

**3**

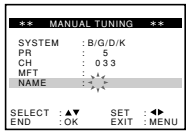
Press ↑/↓ to highlight the row which you want to change or enter the station name, then press →.

To display other pages for programme positions 6 to 80, press ↑/↓ repeatedly.




**4**

Press ↑/↓ to highlight NAME, then press →.



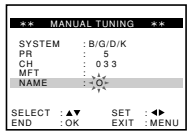



**5**

Enter the station name.

**1** Press ↑/↓ to select a character.
Each time you press ↑, the character changes as shown below.

**A → B → É → Z → 0 → 1 → É → 9 → A**




**2** Press → to set the next character.
The next space flashes.
To correct a character, press ←/→ until the character you want to correct flashes, then reset it.

You can set up to 4 characters for the station name.

**6**

Press OK to confirm the new name.

**7** MENU

Press MENU to exit the menu.





*Basic Operations*

## Playing a tape

**Before you start...**

Refer to "Index to parts and controls" for button locations.

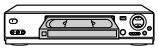
**1**

Turn on your TV and set it to the video channel.

**2**

Insert a tape.

The VCR turns on and starts playing automatically if you insert a tape with its safety tab removed.



**3**

Press ▷ PLAY.

When the tape reaches the end, it will rewind automatically.

**Additional tasks**

| To | Press |
|---|---|
| Stop play | ■ STOP |
| Pause play | ❚❚ PAUSE |
| Resume play after pause | ❚❚ PAUSE or ▷ PLAY |
| Fast-forward the tape | ▶▶ FF during stop |
| Rewind the tape | ◀◀ REW during stop |
| Eject the tape | ⏏ EJECT |

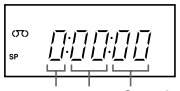
**To set the colour system**

If the playback picture has no colour, or streaks appear during playback, set COLOUR SYSTEM in the USER SET menu to conform to the system that the tape was recored in (see page 58). (Normally set the option to AUTO.)



**To use the time counter**

Press CLEAR at the point on the tape that you want to find later. The counter in the display window resets to "0:00:00." Search for the point afterwards by referring to the counter.




To display the counter on the TV screen, press DISPLAY.

**Notes**

When you play back a tape recorded in the PAL or MESECAM colour system, streaks may appear even if the colour system setting is set to AUTO. If so, set COLOUR SYSTEM to PAL or MESECAM in the USER SET menu (see page 58).
The counter resets to "0:00:00" whenever a tape is reinserted.
The counter stops counting when it comes to a portion with no recording.
If a tape has portions recorded in both PAL and NTSC systems, the time counter reading will not be correct. This discrepancy is due to the difference between the counting cycles of the two colour systems.
Depending on your TV, the following may occur while playing an NTSC-recorded tape:
The picture becomes black and white.
The picture shakes.
No picture appears on the TV screen.
Black streaks appear horizontally on the TV screen.
The colour density increases or decreases.
Tapes recorded in the LP mode of other NTSC system VCRs can be played back on this VCR, but the picture quality cannot be guaranteed.
While setting the menu on the TV screen, buttons for playback on the remote commander do not function.

# Recording TV programmes

**Before you start...**

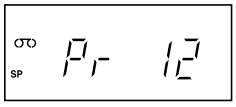
Refer to "Index to parts and controls" for button locations.

**1** Turn on your TV and set it to the video channel.

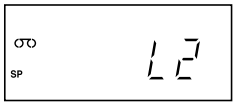
**2** Insert a tape with its safety tab in place.

**3** • PROG +/−, INPUT SELECT

To record a normal channel, press PROG +/ until the programme position number you want appears in the display window.



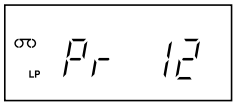

To record from other equipment connected to one or more of the LINE inputs, press INPUT SELECT to display the connected line in the display window.




**4** REC SPEED

Press REC SPEED to select the tape speed (SP or LP for the PAL colour system, and SP or EP for the NTSC colour system).

LP (Long Play) provides recording time twice as long as SP (Standard Play). EP (Extended Play) provides recording time three times as long as SP. However, SP produces better picture and audio quality.

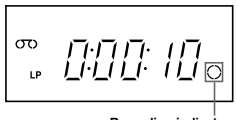





**5** ● REC

Press ● REC to start recording.

The recording indicator lights up red in the display window.




Recording indicator



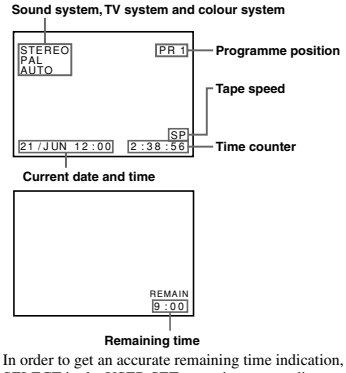
### To stop recording

Press ■ STOP.

### To check the remaining time

Press DISPLAY. Each time you press DISPLAY, the display changes as shown below.

Sound system, TV system, colour system, programme position, tape speed and time counter → Remaining time → Current date and time, and time counter




In order to get an accurate remaining time indication, be sure TAPE SELECT in the USER SET menu is set according to the tape type you use (see page 58).

*continued*



***Recording TV programmes (continued)***

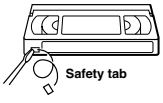
### To watch another TV programme while recording

**1** If the TV is connected to the VCR using an audio/video cable, set the TV to TV input. If the TV is connected to the VCR using only the aerial cable, skip this step.

**2** Select another programme position on the TV.

### To save a recording

To prevent accidental erasure, break off the safety tab as illustrated. To record on the same tape again, cover the tab hole with adhesive tape.




### To record NTSC colour system programmes

For SLV-ED929MI

NTSC colour signals can be recorded on this VCR.

For SLV-ED925PS, ED828ME/SG, ED825PS, ED323ME/SG and ED225PS

NTSC colour signals can be recorded on this VCR from the LINE IN 1 and LINE-2 IN* jacks only.

To select the line input, press INPUT SELECT to display the connected line in the display window.

For tape speed, select SP or EP in step 4.

EP (Extended Play) provides recording time three times as long as SP. However, SP produces better picture and sound quality.

When playing a tape, the VCR automatically detects the tape speed.

**Tips**

- To select a programme position, you can use the programme number buttons on the remote commander. For two-digit numbers, for example, press 2 and 3 to select "Pr 23."
- If you connect additional equipment to the LINE IN 1 or LINE-2 IN* jacks, you can select the input signal using the INPUT SELECT or PROG +/ buttons.
- The DISPLAY information appears on the TV screen indicating information about the tape, but the information will not be recorded on the tape.
- If you do not want to watch TV while recording, you can turn off the TV.

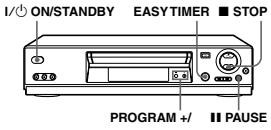
**Notes**

- The DISPLAY information does not appear during still (pause) mode or slow-motion playback.
- If a tape has portions recorded in both PAL and NTSC systems, the time counter reading will not be correct. This discrepancy is due to the difference between the counting cycles of the two video systems.
- When you insert a non-standard commercially available tape, the remaining time may not be correct.
- The remaining time is intended for rough measurement only.
- About 30 seconds after the tape begins playback, the tape remaining time will be displayed.

* not available on SLV-ED825PS, ED323ME/SG and ED225PS

# Recording TV programmes using the Easy Timer

The Easy Timer function allows you to make timer recordings of programmes without turning on your TV. Set the recording timer to record up to eight programmes, including settings made with other timer methods, that will be broadcast within the next month. The recording start time and recording stop time can be set at one minute intervals.




**Before you start...**

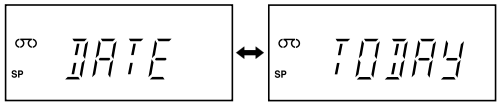
Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.
Refer to "Index to parts and controls" for button locations.

**1** EASY TIMER

Press EASY TIMER.

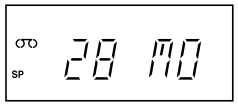
"DATE" and "TODAY" appear alternately in the display window.

If the date and time are not set, "DAY" will appear. See step 2 in the following section, "To set the clock" to set the date and time.




**2** EASY TIMER

Turn EASY TIMER to set the recording date.

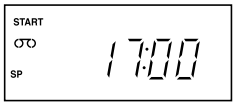





**3** EASY TIMER

Press EASY TIMER.

START indicator and the current time appear in the display window.




**4** EASY TIMER

Turn EASY TIMER to set the recording start time.

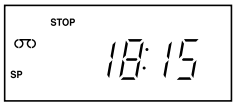
You can set the recording start time in 15 minute intervals or adjust the time in one minute intervals by pressing the PROGRAM +/ buttons.

PROGRAM

**5** EASY TIMER

Press EASY TIMER.

STOP indicator and the recording stop time appear in the display window.

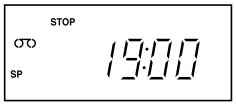



**6** EASY TIMER

Turn EASY TIMER to set the recording stop time.

You can set the recording stop time in 15 minute intervals or adjust the time in one minute intervals by pressing the PROGRAM +/ buttons.

PROGRAM




*continued*



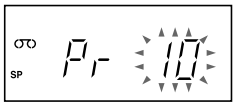


***Recording TV programmes using the Easy Timer (continued)***

**7** EASY TIMER

Press EASY TIMER.

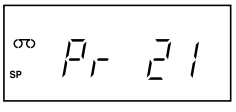
The programme position or LINE input appears in the display window.




**8** EASY TIMER

Turn EASY TIMER to set the programme position.

INPUT SELECT

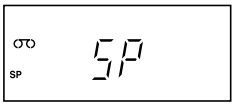



To record from other equipment connected to one or more of the LINE inputs, turn EASY TIMER or press INPUT SELECT to display the connected line in the display window.

**9** EASY TIMER

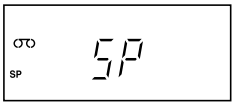
Press EASY TIMER.

The current tape speed mode appears in the display window.




**10** EASY TIMER

Turn EASY TIMER to set the tape speed, SP, LP or AUTO.






**11** EASY TIMER

Press EASY TIMER to complete the setting.

"OK" appears in the display window for about five seconds.

The ⏲ indicator appears in the display window and the VCR stands by for recording.

To record from other equipment, leave the connected equipment switched on.

**To return to the previous step**

To return to the previous step, press the PROGRAM + and buttons on the VCR at the same time during any of the Easy Timer settings.

**To stop recording**

To stop the VCR while recording, press ■ STOP.

**To use the VCR after setting the timer**

To use the VCR before a recording begins, just press I/⏻. The ⏲ indicator turns off and the VCR switches on. Remember to press I/⏻ to reset the VCR to recording standby after using the VCR.

You can also do the following tasks while the VCR is recording:

Reset the counter (page 31).
Display tape information on the TV screen (page 33).
Check the timer settings (page 50).
Watch another TV programme (page 34).

**To use the Auto Tape Speed function**

In step 10 above, turn EASY TIMER to select AUTO. When you are recording a programme in the SP mode and the remaining tape length becomes shorter than the recording time, the recording tape speed is automatically changed to the LP mode (or EP mode when you are recording NTSC signals). Note that some noise will appear on the picture when the tape speed is changed. To operate this function correctly, the "TAPE SELECT" setting in the USER SET menu must be accurate (see page 58).

*continued*

### To set the clock

1. Hold down EASY TIMER so that ÒDAYÓappears in the display window. However, if the clock has already been set, the current setting appears.
2. Turn EASY TIMER to set the day.
3. Press EASY TIMER.
   MONTH indicator and ÒIÓappear in the display window.
4. Turn and press EASY TIMER to set the month, and then the year. After you set the year, ÒCLOCKÓappears in the display window.
5. Turn and press EASY TIMER to set the hour and minute.
6. When you have finished setting the time, press EASY TIMER to start the clock.

**Tips**

To cancel a Easy Timer setting, press ■ STOP on the VCR while you are making the setting.

To check, change, or cancel the programme setting, see Òchecking/changing/cancelling timer settingsÓon page 50.

To record NTSC signals in EP mode, set the tape speed to LP. Even when timer recording is set to LP mode, NTSC signals are automatically recorded in EP mode.

**Notes**

If eight programmes have already been set using the G-CODE system* or the TIMER PROGRAMMING menu, ÒFULLÓappears in the display window for about five seconds.

The ⏲ indicator flashes in the display window when you complete the setting in step 11 with no tape inserted.

When the time is set incorrectly, ÒERRORÓappears in the display window in step 11. Set the timer again from step 1.



### About the Demonstration Mode

The Easy Timer function has a Demonstration Mode that allows the user, such as a salesperson, to enter more than eight examples of timer settings when demonstrating the use of the Easy Timer. It cancels the ÒFULLÓnotice which appears if eight programmes have already been set. Do not use the Demonstration Mode for making timer recordings. Doing so may cause the settings to be inaccurate.

**To activate the Demonstration Mode**

Press ❚❚ PAUSE on the VCR while turning the EASY TIMER. ÒDEMOÓ appears in the display window for a few seconds.

**To cancel the Demonstration Mode**

Turn the power off and unplug the mains lead. Although the Demonstration Mode is cancelled, the timer settings entered while using the Demonstration Mode will remain. Be sure to manually cancel the timer settings before you use the Easy Timer or any other timer method after reconnecting the mains lead (see page 50).

* SLV-ED929MI only





## Recording TV programmes using the G-CODE system (SLV-ED929MI only)

The G-CODE system is the feature that simplifies programming the VCR to make timer recordings. Just enter the G-code number listed in the TV programme guide. The date, times, and programme position of that programme are set automatically. You can preset a total of eight programmes, including settings made with other timer methods.

### Before you startÉ

Check that the VCR clock is set to the correct time and date.

Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.

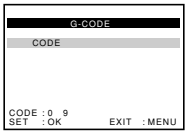
Turn on your TV and set it to the video channel.

Refer to Òndex to parts and controlsÓfor button locations.

**1** G-CODE

Press the G-CODE button.

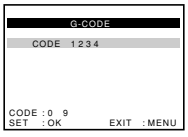
The G-CODE menu appears on the TV screen.




**2** ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⓪ CLEAR

Press the programme number buttons to enter the G-code number.

If you make a mistake, press CLEAR and re-enter the correct number.

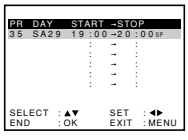





**3** PLAY OK / INPUT SELECT / CLEAR

Press OK.

The date, start and stop times and tape speed appear on the TV screen.




When using the G-CODE system for the first time, Ò Óappears in the ÒPRÓcolumn. Therefore, set the programme position manually.

Press ↑/↓ to select the desired programme position.

To record from other equipment connected to one or more of the LINE inputs, press INPUT SELECT to display the connected line in the ÒPRÓposition.

You will only have to do this operation once for the referred channel. The VCR will then store your setting.

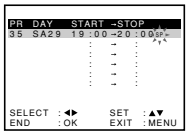
If the information is incorrect, press CLEAR to cancel the setting.

**4** PLAY OK

If you want to change the date and tape speed:

1 Press ←/→, to select the item you want to change.
2 Press ↑/↓ to reset it.

To record the same programme every day or the same day every week, see Òdaily/weekly recordingÓon page 44.




**5** MENU

Press MENU to exit the menu.

**6** I/⏻

Press I/⏻ to turn off the VCR.

The ⏲ indicator appears in the display window and the VCR stands by for recording.

To record from other equipment, leave the connected equipment switched on.

### To stop recording

To stop the VCR while recording, press ■ STOP.

*continued*

*Recording TV programmes using the G-CODE system (SLV-ED929MI only) (continued)*

**Daily/weekly recording**

In step 4 above, press ↓ to select the recording pattern. Each time you press ↓, the indication changes as shown below. Press ↑ to change the indication in reverse order.

**today → DLY (Monday to Sunday) → W-SA (every Saturday) ..... → W-SU (every Sunday) → 1 month later → (dates count down) → today**

**To use the VCR after setting the timer**

To use the VCR before a recording begins, just press I/⏻. The ⏲ indicator turns off and the VCR switches on. Remember to press I/⏻ to reset the VCR to recording standby after using the VCR.

You can also do the following tasks while the VCR is recording:

Reset the counter (page 31).
Display tape information on the TV screen (page 33).
Check the timer settings (page 50).
Watch another TV programme (page 34).

**To use the Auto Tape Speed function**

In step 4 above, press ↓ to select AUTO. When you are recording a programme in the SP mode and the remaining tape length becomes shorter than the recording time, the recording tape speed is automatically changed to the LP mode (or EP mode when you are recording NTSC signals). Note that some noise will appear on the picture when the tape speed is changed. To operate this function correctly, the "TAPE SELECT" setting in the USER SET menu must be accurate (see page 58).

**Tips**

To set the line input video source, you can also use the INPUT SELECT button.
You can set the extended time for the G-CODE setting by 10, 20, 30, 40, 50, or 60 minutes. Set G-CODE EXTEND in the EASY OPERATION menu to the desired extended time on page 59.
To check, change, or cancel the programme setting, see "Checking/changing/cancelling timer settings" on page 50.
To record NTSC signals in EP mode, set the tape speed to LP. Even when timer recording is set to LP mode, NTSC signals are automatically recorded in EP mode.

**Note**

The ⏲ and ⏺ indicators flash in the display window when you press I/⏻ with no tape inserted.



# Recording TV programmes using the timer

You can preset a total of eight programmes, including settings made with other timer methods.

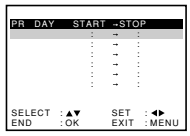
**Before you start…**

Check that the VCR clock is set to the correct time and date.
Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.
Turn on your TV and set it to the video channel.
Refer to "Index to parts and controls" for button locations.



**1** MENU

Press MENU, then press ↑/↓/←/→ to highlight TIMER PROGRAMMING and press OK.



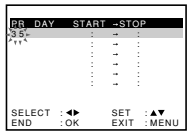

**2**

INPUT SELECT

Set the date, start and stop times and tape speed:

**1** Press → to select each item in turn.
**2** Press ↑/↓ to set each item.

To correct a setting, press ← to return to that setting and reset.




To record the same programme every day or the same day every week, see "Daily/weekly recording" on page 46.
To record from other equipment connected to one or more of the LINE inputs, press INPUT SELECT to display the connected line in the "PRO" position.

**3** MENU

Press MENU to exit the menu.

*continued*



*Recording TV programmes using the timer (continued)*

**4** I/⏻

Press I/⏻ to turn off the VCR.

The ⏲ indicator appears in the display window and the VCR stands by for recording.

To record from other equipment, leave the connected equipment switched on.

**To stop recording**

To stop the VCR while recording, press ■ STOP.

**Daily/weekly recording**

In step 2 above, press ↓ to select the recording pattern. Each time you press ↓, the indication changes as shown below. Press ↑ to change the indication in reverse order.

**today → DLY (Monday to Sunday) → W-SA (every Saturday) ..... → W-SU (every Sunday) → 1 month later → (dates count down) → today**

**To use the VCR after setting the timer**

To use the VCR before a recording begins, just press I/⏻. The ⏲ indicator turns off and the VCR switches on. Remember to press I/⏻ to reset the VCR to recording standby after using the VCR.

You can also do the following tasks while the VCR is recording:

Reset the counter (page 31).
Display tape information on the TV screen (page 33).
Check the timer settings (page 50).
Watch another TV programme (page 34).

**To use the Auto Tape Speed function**

In step 2 above, press ↓ to select AUTO. When you are recording a programme in the SP mode and the remaining tape length becomes shorter than the recording time, the recording tape speed is automatically changed to the LP mode (or EP mode when you are recording NTSC signals). Note that some noise will appear on the picture when the tape speed is changed. To operate this function correctly, the "TAPE SELECT" setting in the USER SET menu must be accurate (see page 58).



**Tips**

To set the line input video source, you can also use the INPUT SELECT button.
To check, change, or cancel the programme setting, see "Checking/changing/cancelling timer settings" on page 50.
To record NTSC signals in EP mode, set the tape speed to LP. Even when timer recording is set to LP mode, NTSC signals are automatically recorded in EP mode.

**Note**

The ⏲ and ⏺ indicators flash in the display window when you press I/⏻ with no tape inserted.

## Playing/searching at various speeds

**Before you start**

Refer to "Index to parts and controls" for button locations.

| Playback options | Operation |
|---|---|
| View the picture during fast-forward or rewind | During fast-forward, hold down ▶▶ FF. During rewind, hold down ◀◀ REW. |
| Play at high speed | During playback, press ▶▶ FF or ◀◀ REW on the remote commander. |
| | During playback, hold down ▶▶ FF or ◀◀ REW. When you release the button, normal playback resumes. |
| Play at twice the normal speed | During playback, press ×2. |
| Play in slow motion | During playback, press ▮► SLOW. |
| Play frame by frame | During pause, press ▶▶ FF on the remote commander. |

**To resume normal playback**

Press ▷ PLAY.



## Setting the recording duration time

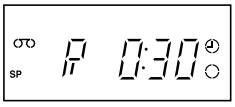
After you have started recording in the normal way, you can have the VCR stop recording automatically after a specified duration.

**Before you start**

Refer to "Index to parts and controls" for button locations.

**1** While recording, press ● REC.

The ⏲ indicator appears in the display window.




**2** Press ● REC repeatedly to set the duration time.

In SP mode

Each press advances the time in increments of 30 minutes.

→ 0:30 → 1:00 ----→ 4:00 → 4:30 → **Normal recording**

In LP (EP) mode

Each press advances the time as shown below.

→ 0:30 → 1:00 ----→ 4:00 → 5:00 ----→ 9:00 → **Normal recording**

The tape counter decreases minute by minute to 0:00, then the VCR stops recording and turns off automatically.

**To extend the duration**

Press ● REC repeatedly to set a new duration time.

**To cancel the duration**

Press ● REC repeatedly until the ⏲ indicator disappears and the VCR returns to the normal recording mode.

**To stop recording**

To stop the VCR while recording, press ■ STOP.

**Note**

You cannot display the current tape time in the display window when setting the recording duration time.





## Checking/changing/cancelling timer settings

**Before you start**

Turn on your TV and set it to the video channel.

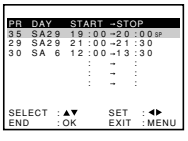
Refer to "Index to parts and controls" for button locations.

**1** Press I/⏻ to turn on the VCR.

**2** Press MENU, then press ↑/↓/←/→ to highlight TIMER PROGRAMMING and press OK.

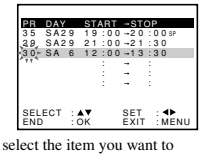
If you want to change or cancel a setting, go on to the next step.

If you do not need to change or cancel the settings, press MENU, then turn off the VCR to return to recording standby.




**3** Press ↑/↓ to select the setting you want to change or cancel, then press →.

The PR number on the selected row flashes.




**4** To change the setting, press ←/→ to select the item you want to change, then press ↑/↓ to reset it.

To cancel the setting, press CLEAR.

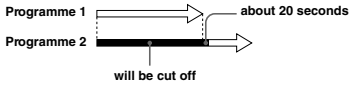
**5** Press MENU to exit the menu.

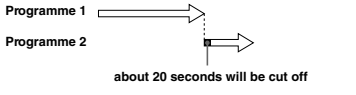
If any settings remain, turn off the VCR to return to recording standby.



**When the timer settings overlap**

The programme that starts first has priority and the second programme starts recording only after the first programme has finished. If the programmes start at the same time, the programme listed first in the menu has priority.



# Recording stereo and bilingual programmes (not available on SLV-ED323ME/SG and ED225PS)

### In the ZWEITON (German stereo) system (SLV-ED929MI and ED925PS only)

This VCR automatically receives and records stereo and bilingual programmes based on the ZWEITON system. When a stereo or bilingual programme is received, the STEREO indicator appears in the display window.

#### To select bilingual sound while recording

Press AUDIO MONITOR to select the sound you want.

| To listen to | On-screen display | Display window |
|---|---|---|
| Main | MAIN | STEREO |
| Sub | SUB | STEREO |
| Main and sub | MAIN/SUB | STEREO |
| Standard sound* | MONO | STEREO |

* Usually the main channel heard from both the left and right in bilingual programmes

#### To select stereo programme while recording

| To listen to | On-screen display | Display window |
|---|---|---|
| Stereo | STEREO | STEREO |
| Left channel | LCH | STEREO |
| Right channel | RCH | STEREO |
| Standard sound | LCH + RCH | STEREO |

* Usually the mixed sound of left and right channels in stereo programmes



### In the NICAM system (SLV-ED929MI and ED925PS only)

This VCR receives and records stereo and bilingual programmes based on the NICAM system (NICAM appears on the TV screen). When a stereo or bilingual programme is received, the STEREO indicator appears in the display window.

To record a NICAM programme, NICAM in the USER SET menu should be set to ON (initial setting). To check the menu setting, see page 59 for details.

#### To select the sound while recording

Press AUDIO MONITOR to select the sound you want.

**Stereo programmes**

| To listen to | On-screen display | Display window |
|---|---|---|
| Stereo | NICAM, STEREO | NICAM, STEREO |
| Left channel | NICAM, LCH | NICAM, STEREO |
| Right channel | NICAM, RCH | NICAM, STEREO |
| Left and right channels* | NICAM, LCH + RCH | NICAM, STEREO |

* Usually the mixed sound of left and right channels

**Bilingual programmes**

| To listen to | On-screen display | Display window |
|---|---|---|
| Main | NICAM, MAIN | NICAM, STEREO |
| Sub | NICAM, SUB | NICAM, STEREO |
| Main and sub | NICAM, MAIN/SUB | NICAM, STEREO |
| Standard sound* | NICAM, MONO | NICAM, STEREO |

* Usually the main sound (monaural)



*continued*



***Recording stereo and bilingual programmes (not available on SLV-ED323ME/SG and ED225PS) (continued)***

### Selecting the sound during Hi-fi playback

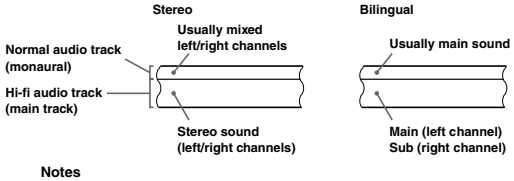
Press AUDIO MONITOR to select the sound you want.

| To listen to | On-screen display | Display window |
|---|---|---|
| Stereo | STEREO | STEREO |
| Left channel | LCH | STEREO |
| Right channel | RCH | STEREO |
| Mix sound* | MIX | STEREO |
| Mono sound | MONO | No indicator |

* The mixed sound of left and right channels, and the normal mono audio track

### How sound is recorded on a video tape

The VCR records sound onto two separate tracks. Hi-fi audio is recorded onto the main track along with the picture. Monaural sound is recorded onto the normal audio track along the edge of the tape.




**Notes**

To listen to playback sounds in stereo, you must use the AUDIO OUT connections.

When you play a tape recorded in monaural, the sound is heard in monaural regardless of the AUDIO MONITOR setting.



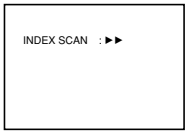
# Searching using the index function

The VCR automatically marks the tape with an index signal at the point where each recording begins. Use these signals as references to find a specific recording.

#### To find a specific recording by scanning (Index scan)

**1** Insert an indexed tape into the VCR.

**2** Press ⏮/⏭ INDEX SEARCH. The VCR starts scanning each recording for five seconds in the corresponding direction.




**3** Press ▷ PLAY to start playback when you find the desired point.

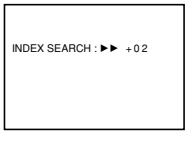
#### To search a specific recording (Index search)

**1** Insert an indexed tape into the VCR.

**2** Press ⏮/⏭ INDEX SEARCH twice.

To search ahead, press ⏭ INDEX SEARCH twice.

To search backwards, press ⏮ INDEX SEARCH twice.




**3** Press ⏮/⏭ INDEX SEARCH depending on the direction where your desired programme is located.

Each time you press the button, the number increases or decreases up to ±20, respectively.

**4** The VCR starts searching, and playback starts automatically from that point.

#### To stop searching

Press ■ STOP.

**Notes**

No index signal will be added when recording starts from recording pause. However, an index signal will be marked if you change the programme position during recording pause.

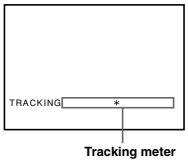
When you press ⏮ INDEX SEARCH, if there is nothing recorded before the selected index signal, playback may not start exactly at the index signal.

## Adjusting the picture

### Adjusting the tracking

Although the VCR automatically adjusts the tracking when playing a tape, distortion may occur if the recording is in poor condition. In this case, manually adjust the tracking.

During playback, press TRACKING +/ on the VCR to display the tracking meter. The distortion should disappear as you press one of the two buttons. To resume automatic tracking adjustments, eject the tape and re-insert it.



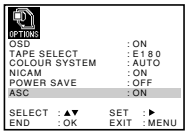
Tracking meter

### Adjusting the picture sharpness (Auto Sharpness Control)

You can automatically adjust the sharpness of the picture.

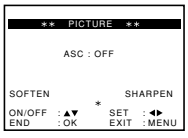
**1** During playback, press MENU, then press ↑/↓/←/→ to highlight USER SET and press OK.

**2** Press ↑/↓ to highlight ASC, then press →.




**3** Press ↑/↓ to set ASC to ON or OFF.

ON: Picture sharpness is automatically adjusted.
OFF: Adjust the picture sharpness manually.
To soften the picture, press ←.
To sharpen the picture, press →.




**4** Press MENU to return to the original screen.



## Reducing the VCR's power consumption

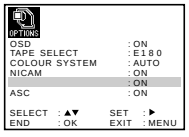
You can turn off the indicators in the display window when the VCR is off (standby mode) to reduce the VCR's power consumption.

**1** Press MENU, then press ↑/↓/←/→ to highlight USER SET and press OK.

**2** Press ↑/↓ to highlight POWER SAVE.

**3** Press → to set to ON, then press OK.

The power consumption is reduced to a minimum.




### To turn on the indicators in the display window

Set POWER SAVE to OFF in step 3.

**Note**

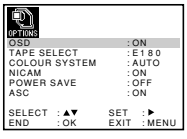
- When the VCR stands by for recording, the ⏲ indicator in the display window remain lit even when POWER SAVE is set to ON.

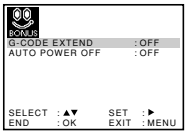




## Changing menu options

**1** Press MENU, then select USER SET or EASY OPERATION and press OK.




**2** Press ↑/↓ to select the option.

**3** Press → to change the setting, then press OK.

### Menu choices

Initial settings are indicated in bold print.

#### USER SET

| Menu option | Set this option to |
|---|---|
| OSD | **ON** to display the menu on the TV screen.<br>OFF to disappear the menu from the TV screen. |
| TAPE SELECT | **E180** to use an E-180 or shorter type tape.<br>E240 to use an E-240 type tape.<br>E260 to use an E-260 type tape.<br>E300 to use an E-300 type tape. |
| COLOUR SYSTEM | **AUTO** to select the colour system automatically.<br>PAL to use the tape recorded in the PAL colour system.<br>MESECAM to use the tape recorded in the MESECAM colour system.<br>B/W to use the tape recorded in black and white.<br>When using the tape recorded NTSC colour signals:<br>**NT3.58** to use the tape recorded in the NTSC 3.58 colour system.<br>NT4.43 to use the tape recorded in the NTSC 4.43 colour system.<br>NTPB to play back an NTSC-recorded tape on PAL TV. |



| Menu option | Set this option to |
|---|---|
| NICAM*1 | **ON** to record NICAM broadcasts on the hi-fi audio track.<br>OFF to record standard sound on the hi-fi audio track.<br>For details, see page 53. |
| POWER SAVE | ON to turn off the indicators in the display window to conserve the VCR's power.<br>**OFF** to turn on the indicators in the display window while the VCR is standing by. |
| ASC | **ON** to automatically adjust the sharpness of the picture.<br>OFF to manually adjust the sharpness of the picture. |

#### EASY OPERATION

| Menu option | Set this option to |
|---|---|
| G-CODE EXTEND*2 | **OFF** to deactivate the G-CODE Extend function.<br>10/20/30/.../60 (minutes) to extend the time of the G-CODE setting by the selected amount of time. |
| AUTO POWER OFF | **OFF** to deactivate the Auto Power Off function.<br>2HOUR/3HOUR to turn the VCR off automatically if no signal is received and you do not press any of the buttons during this time. |

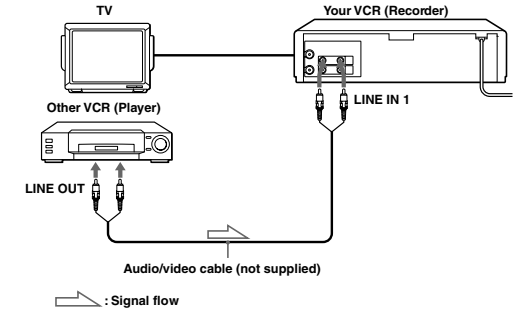
*1 SLV-ED929MI and ED925PS only
*2 SLV-ED929MI only

# Connecting to a VCR or stereo system

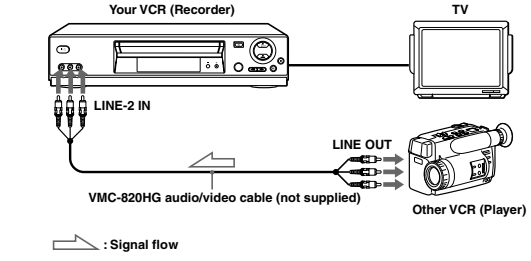
### How to connect to record on this VCR

Connect the line outputs of the other VCR to the input connector of this VCR. Refer to the examples A through C and choose the connection that best suits your VCR.

**Example A (SLV-ED323ME/SG and ED225PS only)**

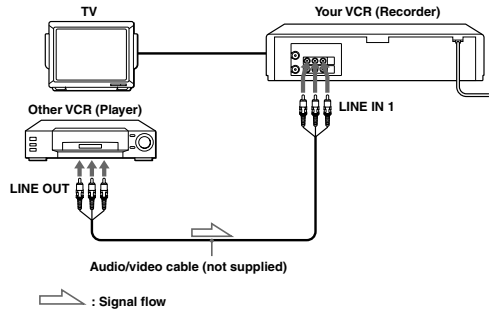



**Example B (SLV-ED929MI, ED925PS and ED828ME/SG only)**






**Example C (SLV-ED825PS only)**




### How to connect to a stereo system (not available on SLV-ED323ME/SG and ED225PS)

Connect the LINE-2 IN* jacks on this VCR to the audio output jacks on the stereo system, using the RK-C510HG audio cable (not supplied).

**Notes**

Make sure you connect the plugs to jacks of the same colour.
If the other VCR is a monaural type, leave the red plugs unconnected.
If you connect this VCR to both the LINE IN and LINE OUT jacks of the other VCR, select the input correctly to prevent a humming noise.
When you connect another VCR to the LINE-2 IN* connector, press INPUT SELECT to display Ò L-2Ó in the display window.

* not available on SLV-ED825PS



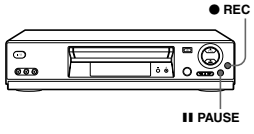


# Basic editing

### When recording on this VCR

**Before you start editing**

Turn on your TV and set it to the video channel.
Press INPUT SELECT to display the connected line in the display window.
Press REC SPEED to select the tape speed.




**1** Insert a source tape with its safety tab removed into the other (playback) VCR. Search for the point to start playback and set it to playback pause.

**2** Insert a tape with its safety tab in place into this (recording) VCR. Search for the point to start recording and press ❚❚ PAUSE to set it to playback pause.

**3** Press ● REC on this VCR to set it to recording pause.

**4** To start editing, press the ❚❚ PAUSE buttons on both VCRs at the same time.

**To stop editing**

Press the ■ STOP buttons on both VCRs.

**Tip**

To cut out unwanted scenes while editing, press ❚❚ PAUSE on this VCR when an unwanted scene begins. When it ends, press ❚❚ PAUSE again to resume recording.





# Troubleshooting

If you have any questions or problems not covered below, please consult your nearest Sony service facility.

| | Symptom | Remedy |
|---|---|---|
| Power | The I/⏻ ON/STANDBY switch does not function. | Connect the mains lead to the mains securely. |
| | The power is turned on but the VCR does not operate. | Moisture condensation has occurred. Turn the power off, unplug the mains lead and leave the VCR to dry for over three hours. |
| | The VCR is plugged in but the display window remains dark. | Set POWER SAVE in the USER SET menu to OFF (see page 57). |
| Clock | The clock has stopped and Ò : Óappears in the display window. | The clock stops if the VCR is disconnected from the mains. Reset the clock (and timer). |
| Playback | The playback picture does not appear on the TV screen. | Make sure the TV is set to the video channel. If you are using a monitor, set it to video input.<br>If you made connections using the aerial cable only, make sure the RF channel number is set correctly for your area. |
| | The picture is not clear. | Existing broadcasts may interfere with the VCR. Reset the RF channel output of your VCR (see page 17).<br>Adjust the tracking with the TRACKING +/ buttons on the VCR.<br>The video heads are dirty (see the last page of Troubleshooting). Clean the video heads using the Sony T-25CLD, E-25CLDR, or T-25CLW video head cleaning cassette. If these cleaning cassettes are not available in your area, have the heads cleaned at your nearest Sony service facility (a standard service charge will be required). Do not use a commercially available liquid type cleaning cassette other than SonyÕ, as it may damage the video heads.<br>The video heads may have to be replaced. Consult your local Sony service facility for more information. |
| | The picture has no colour. | The COLOUR SYSTEM option in the USER SET menu is set to the wrong position. Set the option to conform to the system that the tape was recorded in. |
| | The picture rolls vertically during picture search. | Adjust the vertical hold control on the TV or monitor. |

*continued*

*Troubleshooting (continued)*

| | Symptom | Remedy |
|---|---|---|
| Playback | The picture has no sound. | The tape is defective.<br>If you made A/V connections, check the audio cable connection.<br>If you made connections using the aerial cable only, make sure the TV system is set correctly for your area. |
| | The sound from a tape recorded with the VCR is not in stereo or the STEREO indicator in the display window is flashing. | Adjust the tracking.<br>The video heads are dirty. Clean the video heads using the Sony T-25CLD, E-25CLDR, or T-25CLW video head cleaning cassette as explained above. |
| Recording | No TV programme appears on the TV screen. | Make sure the TV is set to the video channel. If you are using a monitor, set it to video input.<br>Existing broadcasts may interfere with the VCR. Reset the RF channel output of your VCR (see page 17).<br>Select the correct source with the INPUT SELECT button. Select a programme position when recording TV programmes; select a line input when recording from other equipment. |
| | TV reception is poor. | Make sure the aerial cable is connected securely.<br>Adjust the TV aerial.<br>Make sure the TV system is correctly set for your TV.<br>Make sure TV SYSTEM (B/G, D/K, I, B/B, U.S ANT., U.S HRC, U.S IRC or JAPAN) in the INSTALLATION menu is set to the same system in your local area. |
| | The recorded picture has no colour or unusual colour. | Set COLOUR SYSTEM in the USER SET menu according to your local colour system. |
| | The tape starts playing as soon as it is inserted. | The safety tab has been removed. To record on this tape, cover the tab hole (see page 34). |
| | The tape is ejected when you press ● REC. | The safety tab has been removed. To record on this tape, cover the tab hole (see page 34). |
| | Nothing happens when you press ● REC. | Make sure the tape is not at its end. |



| | Symptom | Remedy |
|---|---|---|
| Timer recording | The timer does not operate. | Check that the clock is set.<br>Make sure a tape has been inserted.<br>Check that the safety tab has not been removed.<br>Make sure the tape is not at its end.<br>Make sure a programme has been set for timer recording.<br>Make sure your timer settings are past the current time.<br>The clock stops if the VCR is disconnected from the mains. Reset the clock and timer.<br>Turn the power off and unplug the mains lead. |
| Others | A tape cannot be inserted. | Check that a tape is not already in the tape compartment. |
| | The remote commander does not function. | Make sure you are pointing the remote commander at the remote sensor on the VCR.<br>Replace all the batteries in the remote commander with new ones if they are weak.<br>Make sure the TV/VIDEO remote control switch is set correctly. |
| | The selected input line connector number does not appear in the display window. | Press INPUT SELECT to display the connected line. |
| | The tracking meter does not appear on the TV screen. | The recording condition of the tape is very poor and tracking cannot be adjusted. |
| | The display window becomes dim. | The display window automatically becomes dim when the VCR is in standby mode. |
| | The VCR needs to be cleaned. | Clean the cabinet, panel and controls with a dry, soft cloth, or a soft cloth slightly moistened with a mild detergent solution. Do not use any type of solvent, such as alcohol or benzine. |

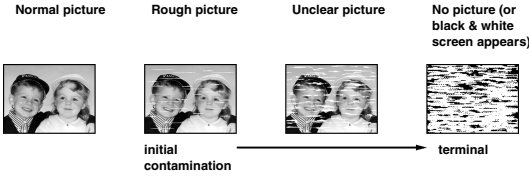


*continued*



*Troubleshooting (continued)*

**Symptoms caused by contaminated video heads**




# Index


**A**

Adjusting
- picture 56
- tracking 56

Aerial hookup 13
ASC (Auto Sharpness Control) 56
Audio track 54
Audio/video hookup 14
Auto Set Up 15

**C**

Changing the programme position 25
Changing the station name 28
Cleaning the video heads 63
Clock setting 18
Colour system
- compatible colour systems 2
- setting 30

Connecting
- the VCR and your TV 13
- to a stereo system 14, 60
- to a TV with audio/video jacks 14

Counter 31

**D**

Demonstration 41
Disabling the programme positions 26
Dubbing. *see* Editing

**E**

Easy Timer 36
Editing 60
EP mode 32

**H**

Hi-fi audio track 54

**I**

Index scan 55
Index search 55

**L**

Language selection 15, 21
LP mode 32

**M**

Manual fine tuning 24
Monaural 53
Monitoring
- during playback 54
- during recording 52

**N**

NICAM broadcasts 53
Normal audio track 54

**O**

Optional setting 58

**P**

Playback 30
- at various speeds 48
- frame-by-frame 48
- selecting the sound 52
- slow motion 48

Power save 57
Presetting channels 22

**R**

Recording 32
- bilingual programmes 52
- duration time 49
- saving 34
- stereo programmes 52
- timer setting 45
- using the Easy Timer 36
- using the G-CODE system 42
- while watching another programme 34

RF channel 15, 17

**S**

Safety tab 34
Searching
- at various speeds 48
- using the index function 55

G-CODE
- recording 42

SP mode 32
Stereo 52

**T**

Timer setting 45
- cancelling 50
- changing 50
- checking 50
- daily/weekly recording 44, 46
- using the Easy Timer 36
- using the G-CODE system 42

**Z**

ZWEITON broadcasts 52




Sony Corporation
http://www.sony.net/
AC68-01837A

# 2. DISASSEMBLY

## 2-1 MONO MODELS

### 2-1-1 CASE UPPER

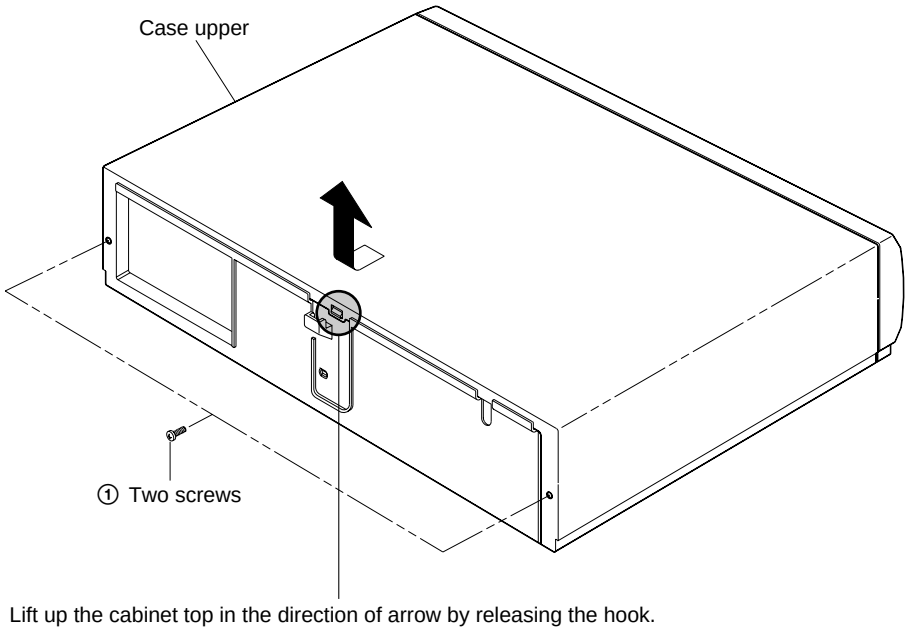



Fig. 2-1 Cabinet Top

### 2-1-2 COVER BOTTOM

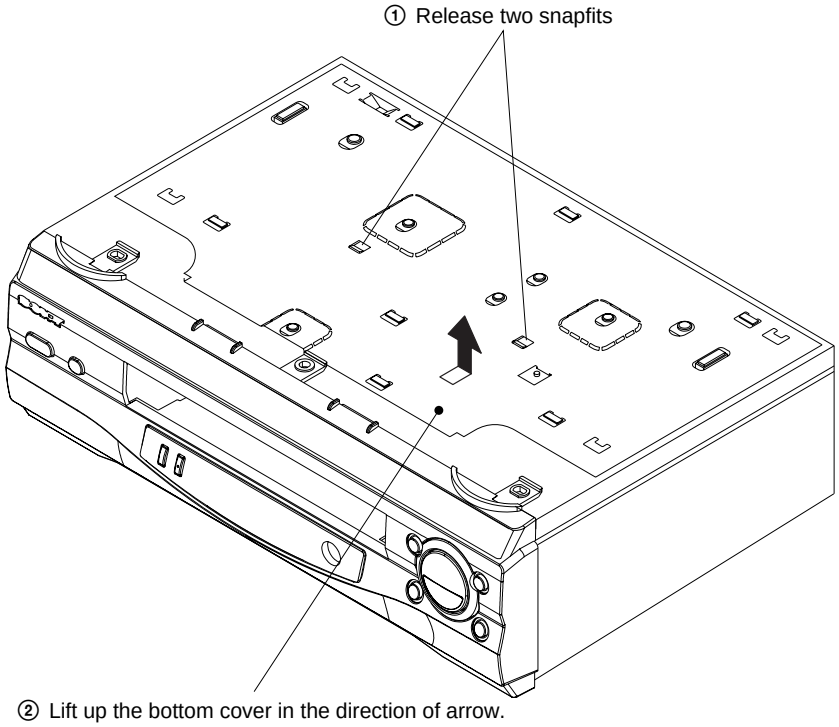



Fig. 2-2 Cover Bottom

## 2-1-3 ASS'Y-PANEL FRONT

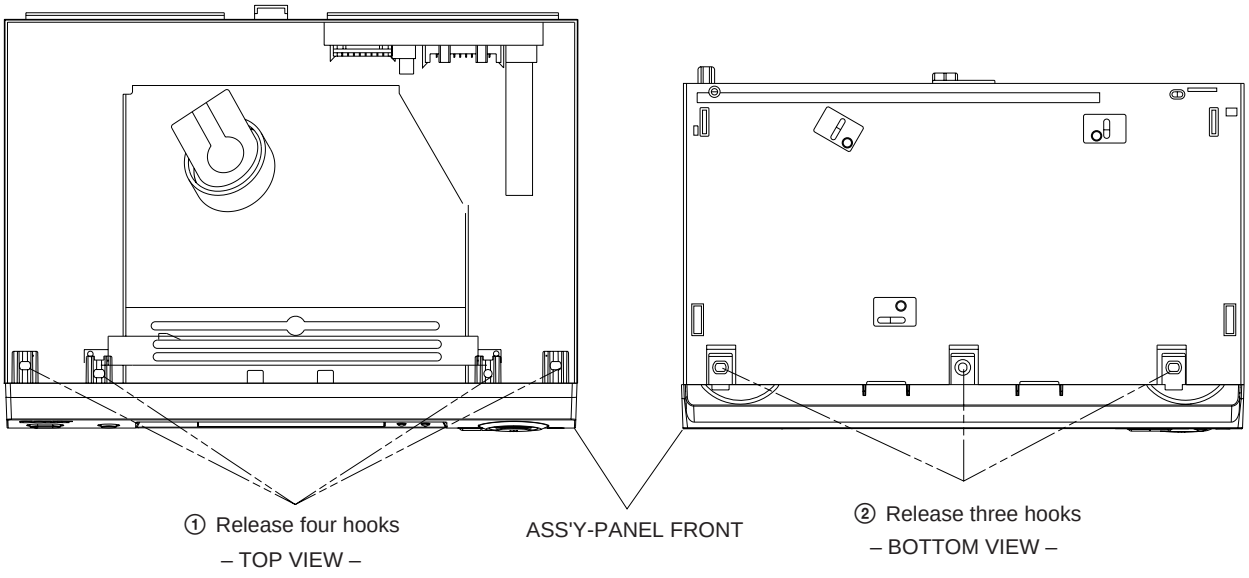



Fig. 2-3 Ass'y-Panel Front

## 2-1-4 ASS'Y MAIN BOARD, DECK

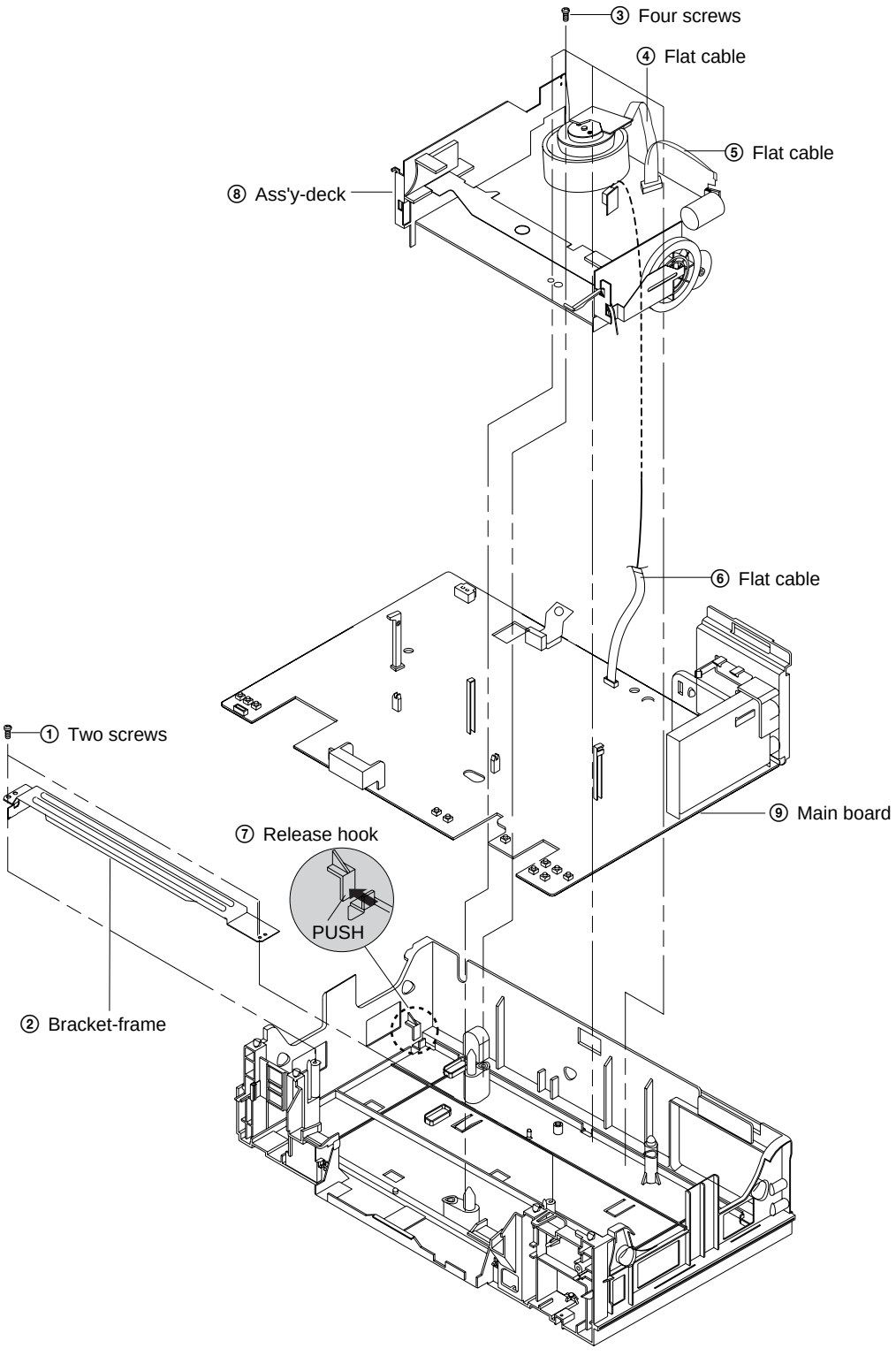



Fig. 2-4 Ass'y Main-PCB, Deck

## 2-2 Hi-Fi MODELS

### 2-2-1 CASE UPPER

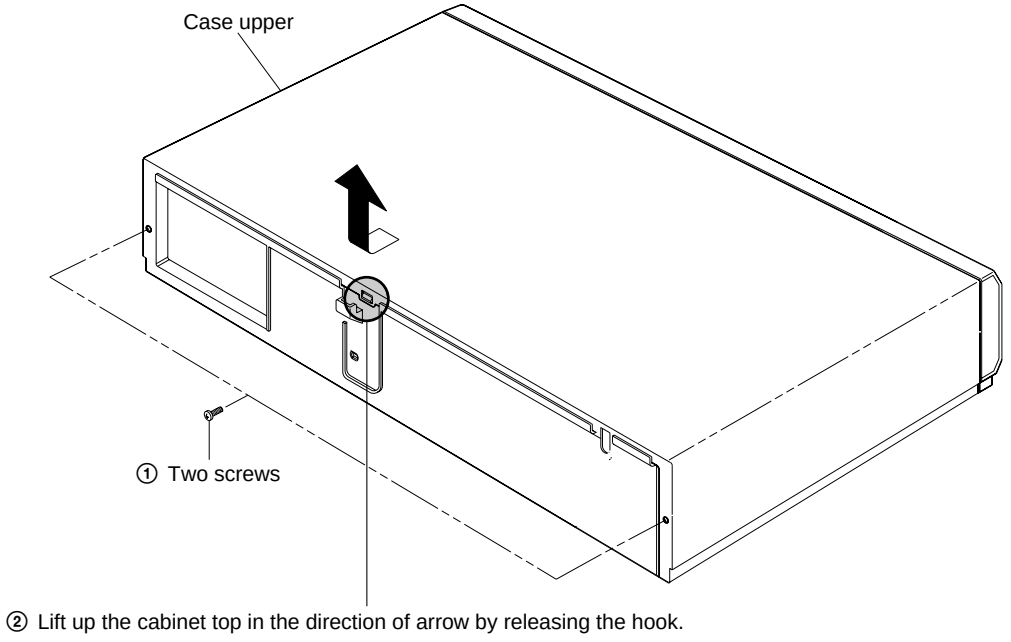



Fig. 2-5 Cabinet Top

### 2-2-2 COVER BOTTOM

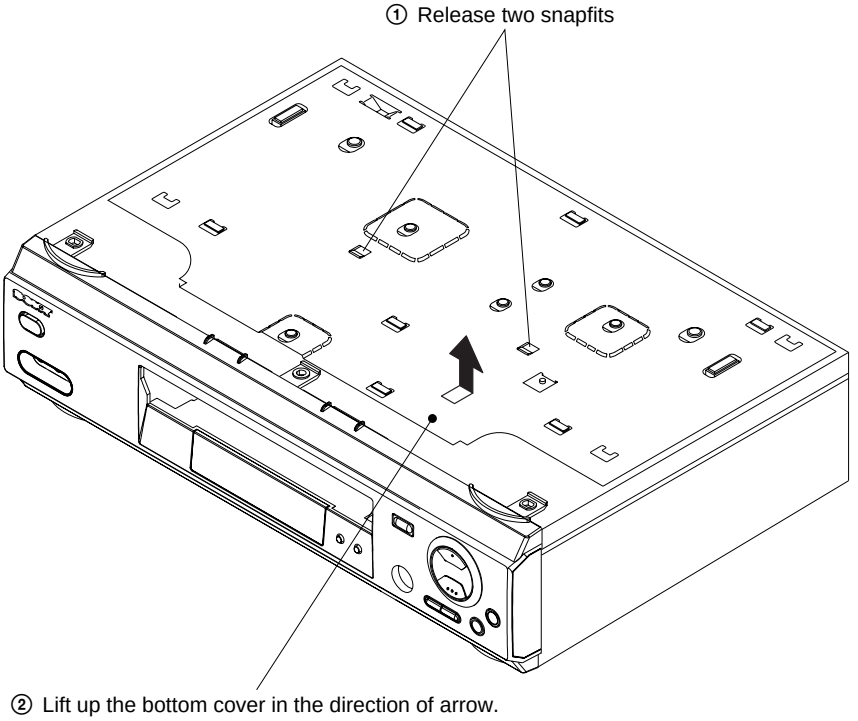



Fig. 2-6 Cover Bottom

## 2-2-3 ASS'Y-PANEL FRONT

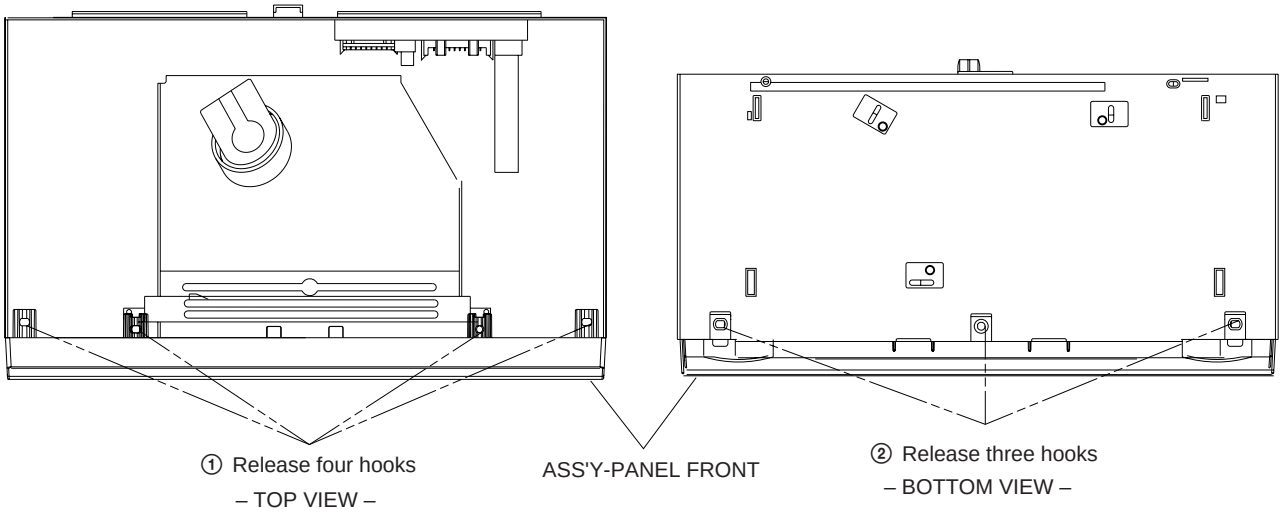



Fig. 2-7 Ass'y-Panel Front

## 2-2-4 JACK BOARD

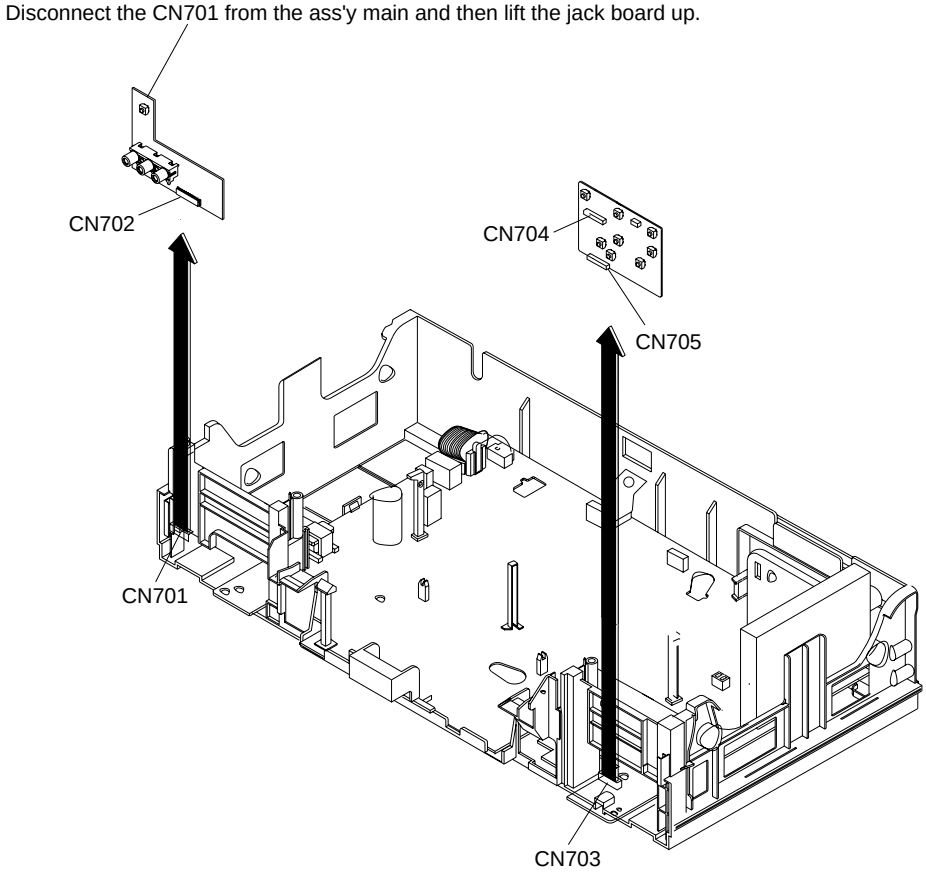



Fig. 2-8 Jack Board

## 2-2-5 DECK, MAIN BOARD

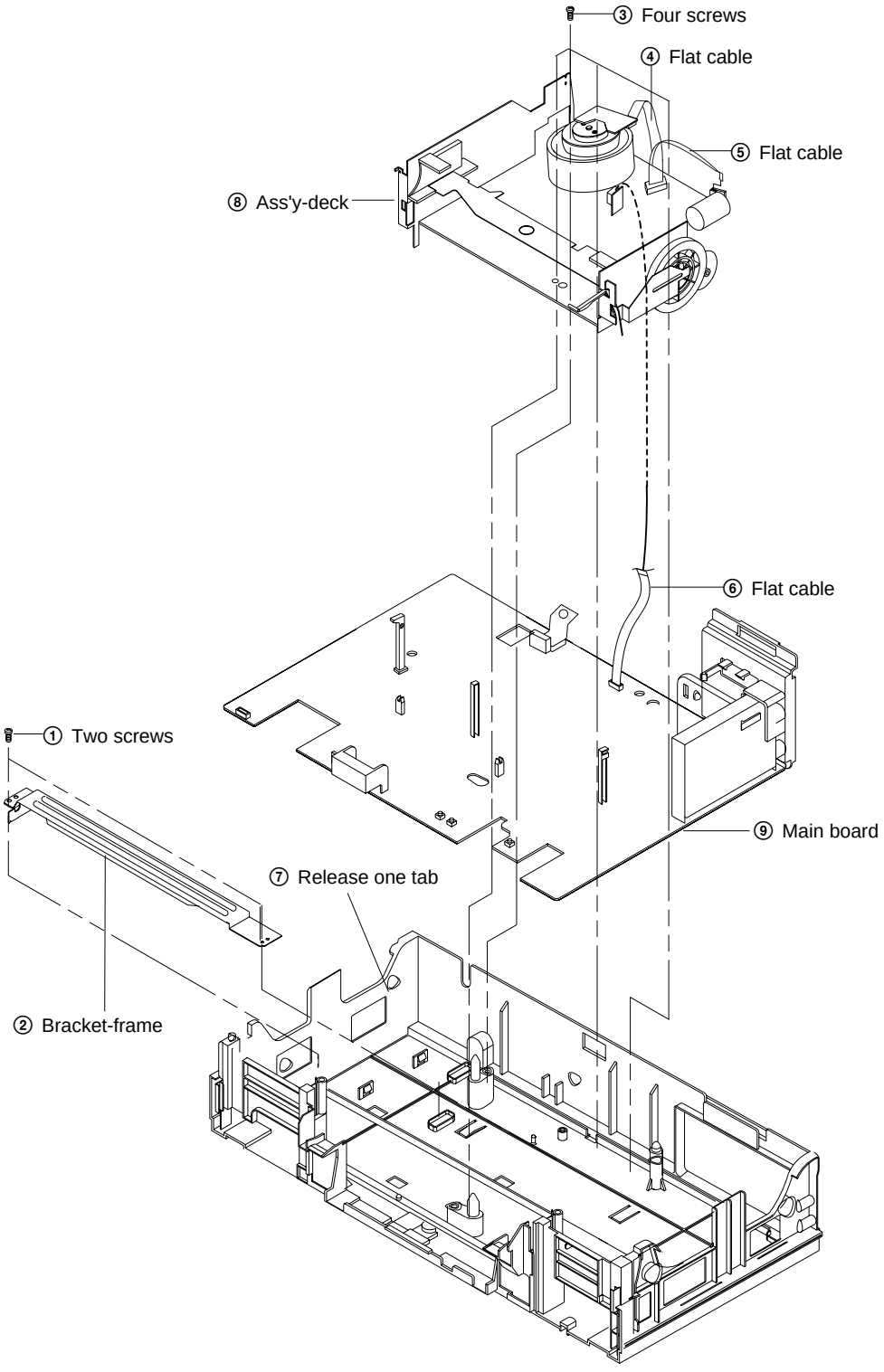


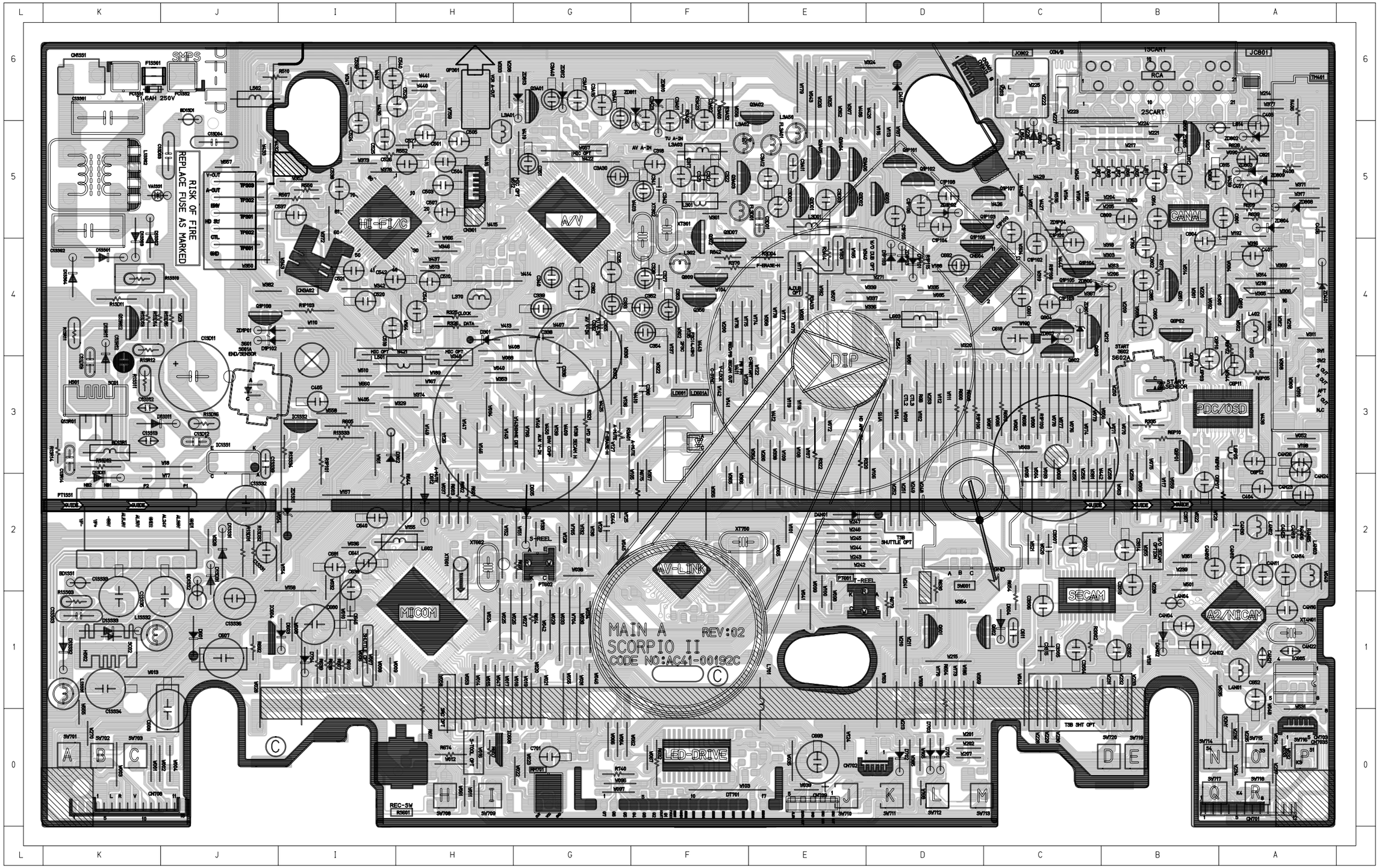

Fig. 2-9 Ass'y Main-PCB, Deck

# 3. P.C.BOARDS

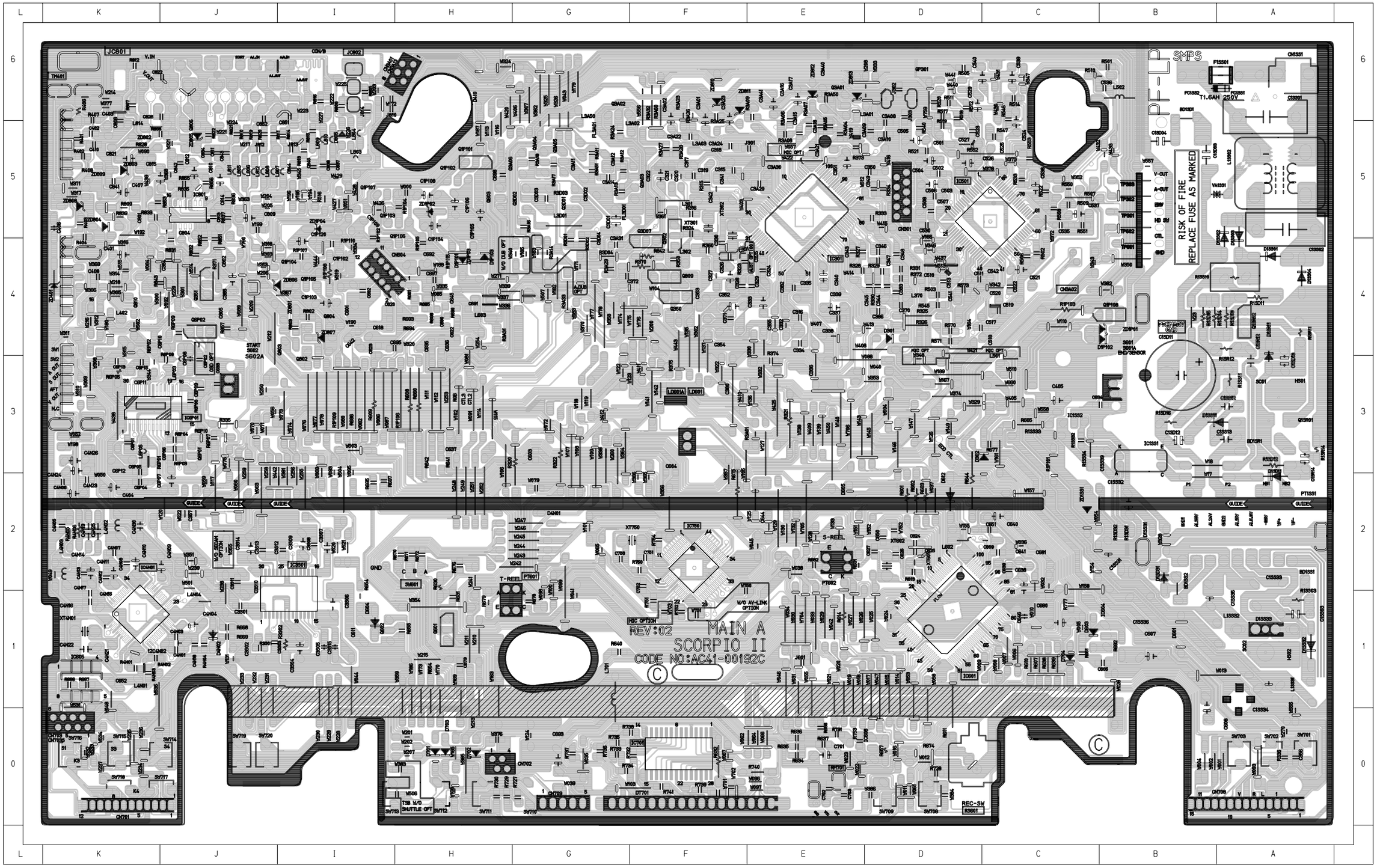
3-1 Main PCB (AUS) - - -

## 3-1 MAIN PCB (AUS)

**COMPONENT SIDE**

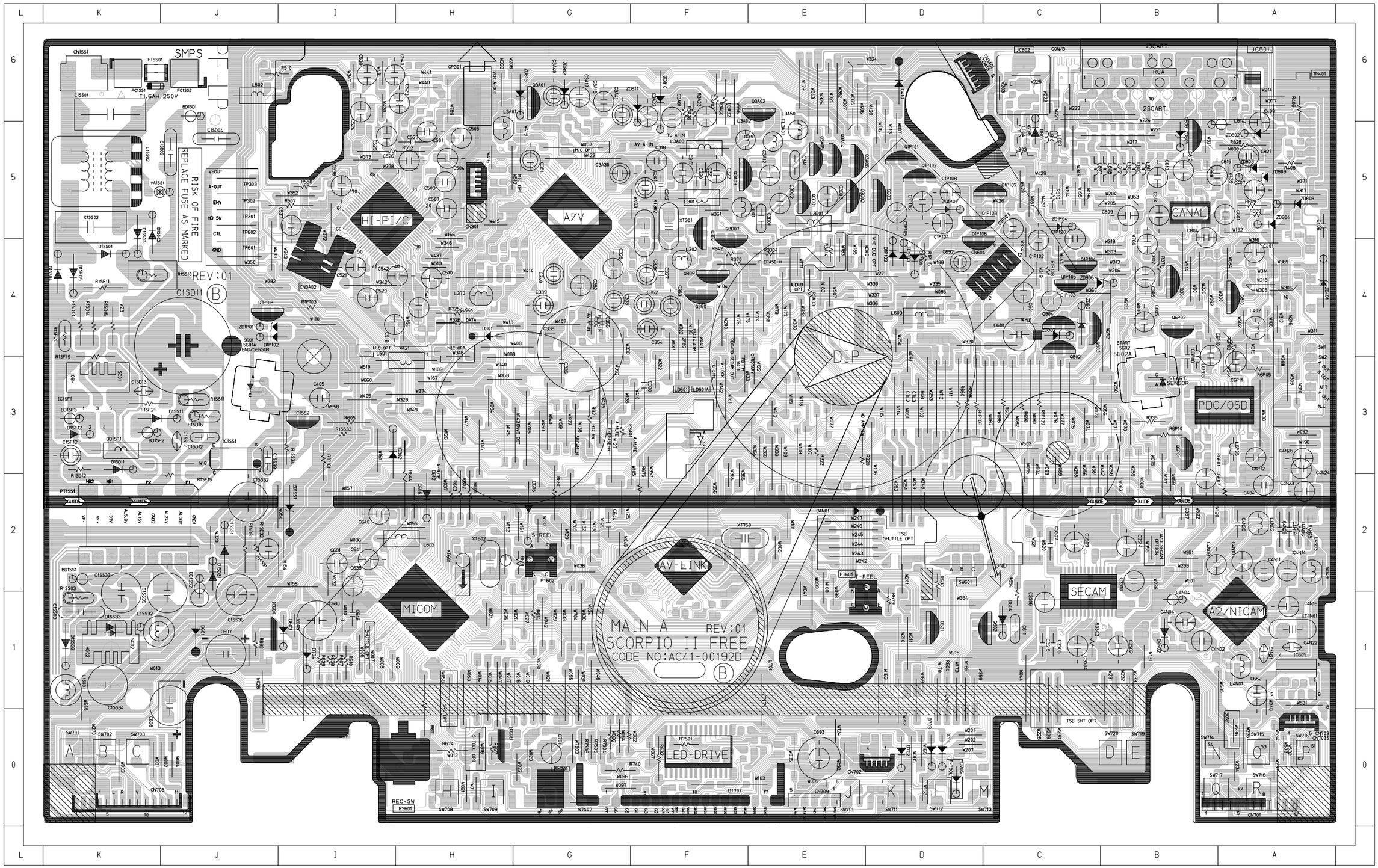


## CONDUCTOR SIDE

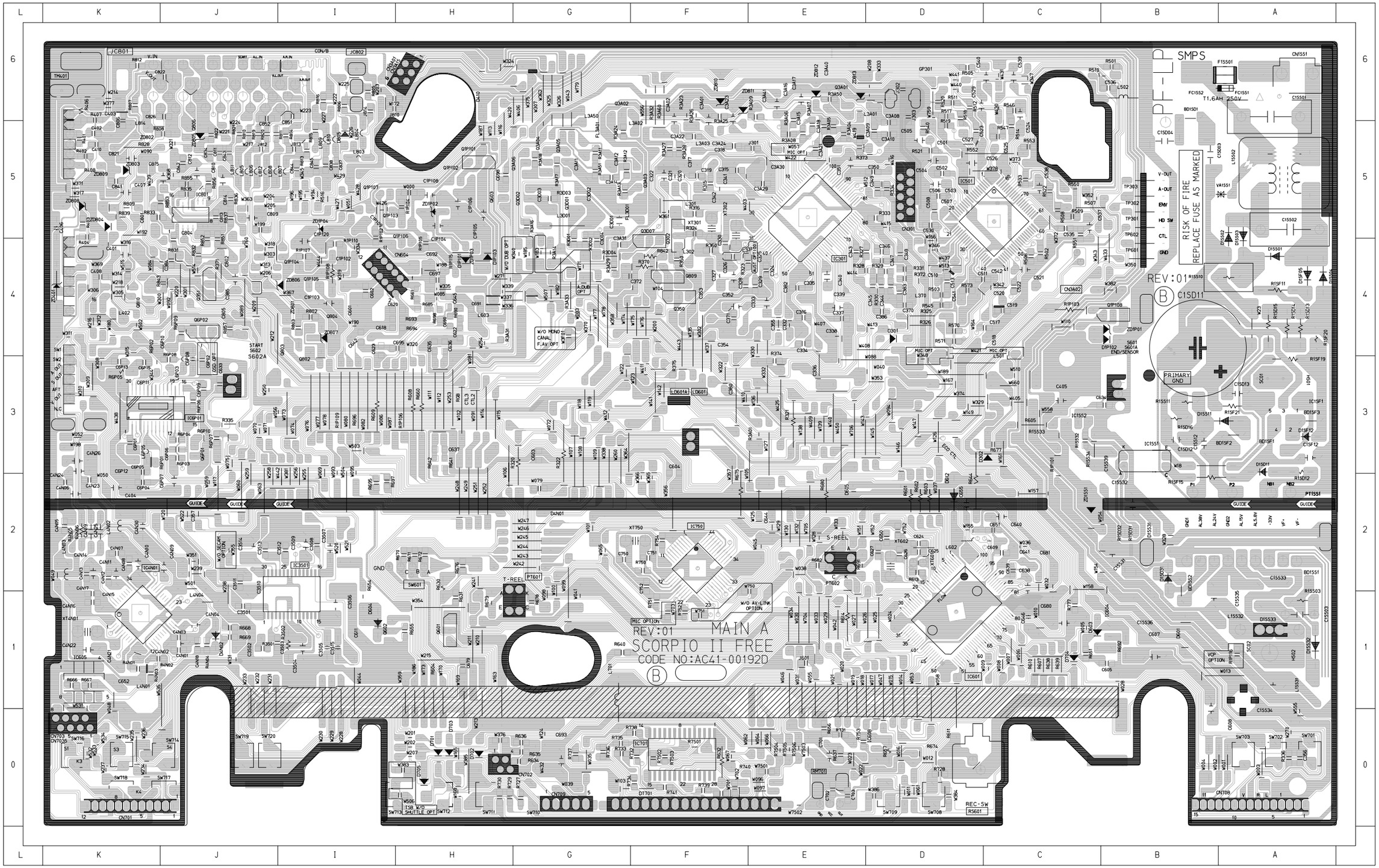


## 3-2 MAIN PCB (E, HK, ME)

### COMPONENT SIDE

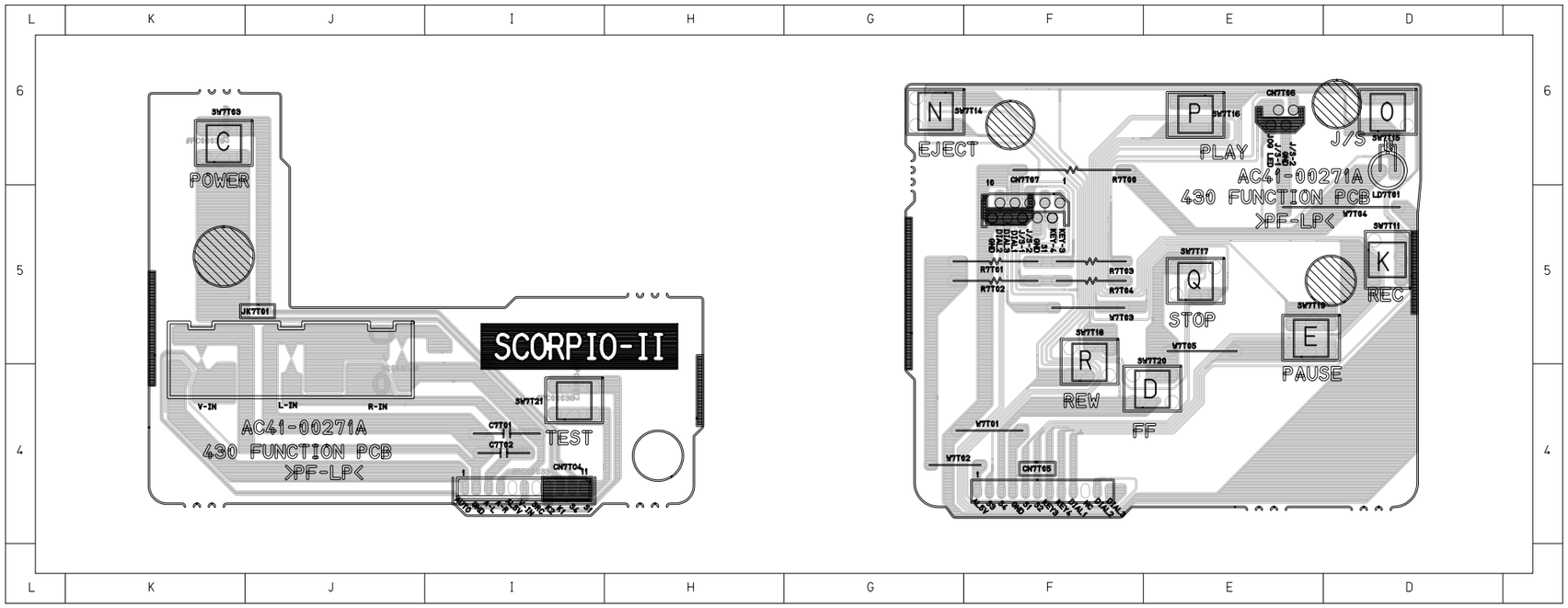


## CONDUCTOR SIDE

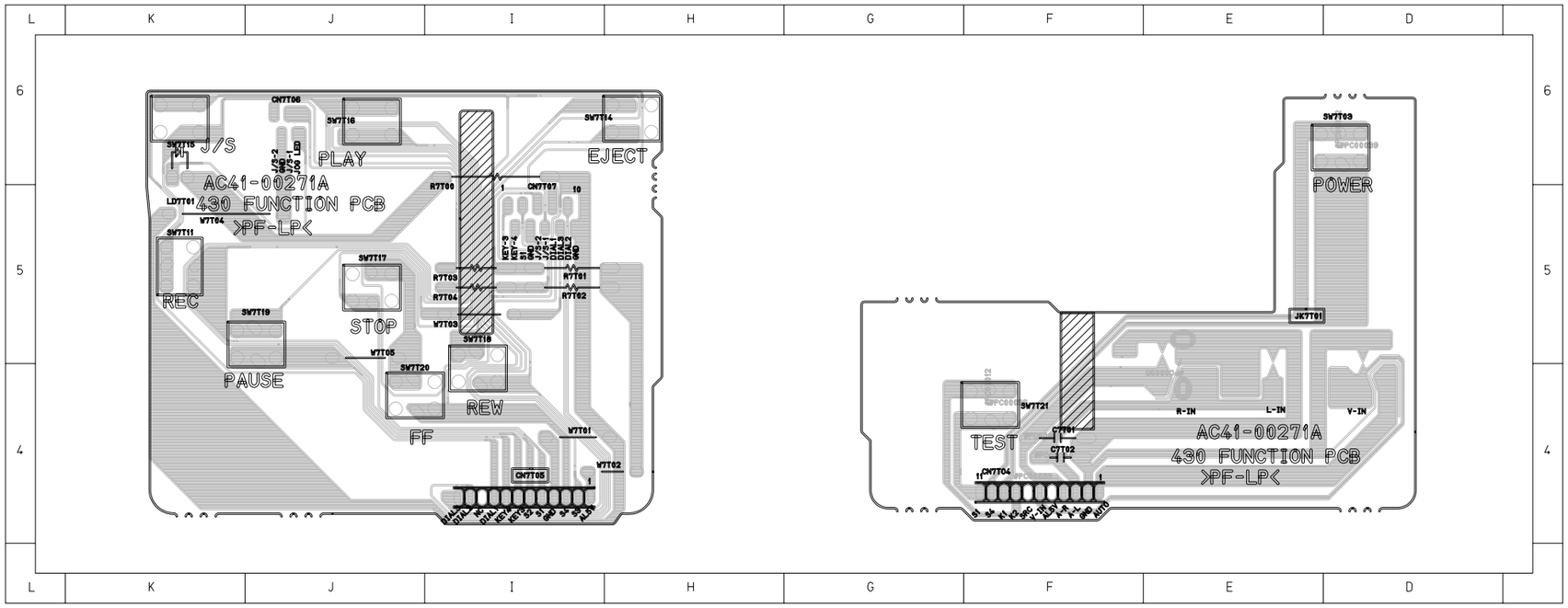


## 3-3 FUNCTION PCB (Hi-Fi MODEL)

### COMPONENT SIDE




### CONDUCTOR SIDE



# 4. SCHEMATIC DIAGRAMS

◆ Block Identification of Main PCB ---------- 4-3

4-1 S.M.P.S. (AUS) ---------- 4-5

4-2 S.M.P.S. (E, HK, ME) ---------- 4-7

4-3 Power ---------- 4-9

4-4 System Control/Servo ---------- 4-11

4-5 Audio/Video ---------- 4-13

4-6 Hi-Fi (Hi-Fi model) ---------- 4-15

4-7 TM-Block ---------- 4-17

4-8 OSD/VPS/PDC ---------- 4-19

4-9 A2/NICAM (ED925/ED929/EZ725/EZ727) ---------- 4-21

4-10 Input-Output (RCA Jack) ---------- 4-23

4-11 Sub (Hi-Fi model) ---------- 4-25

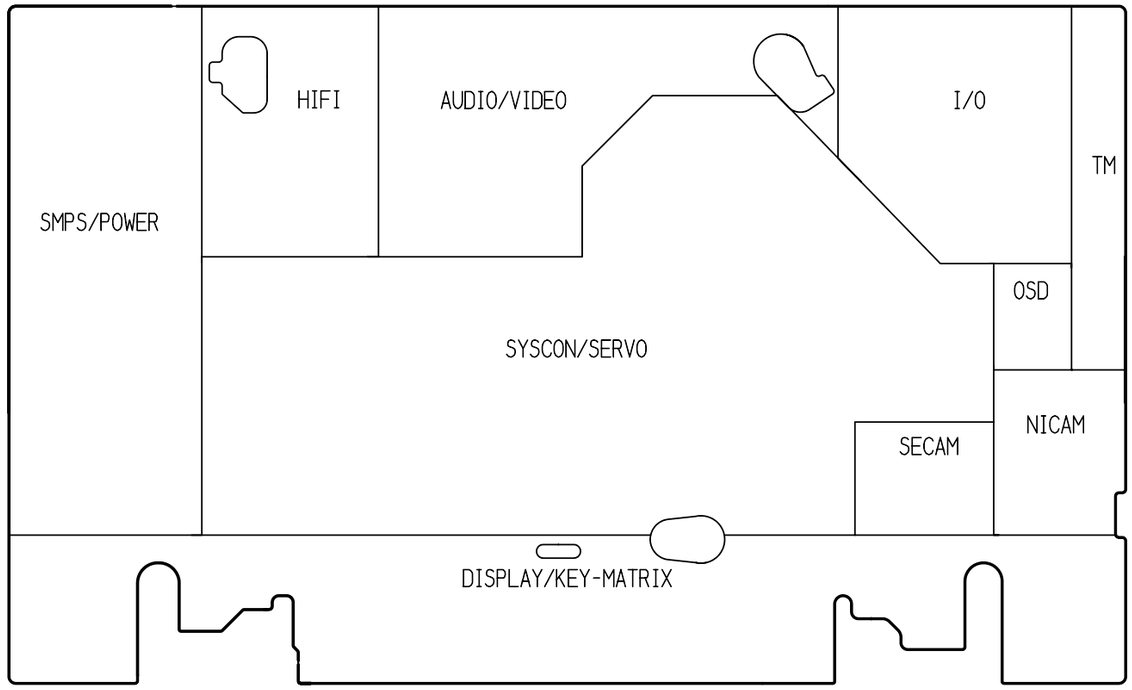
◆ Waveform ---------- 4-27

◆ Voltage Table ---------- 4-29

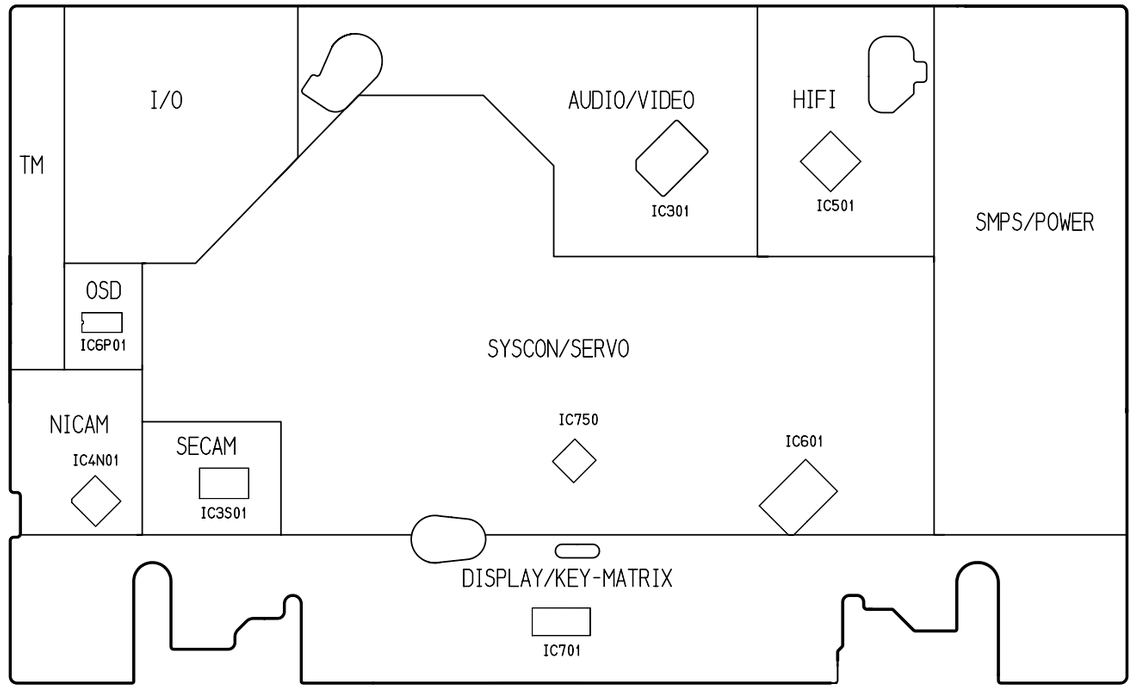
- Abbreviation
  AUS : Australia model
  HK : Hong Kong model
  ME : Middle East model

- Hi-Fi model: ED825/ED828/ED925/ED929/EZ725/EZ727
  Mono model: ED225/ED323/EZ121/EZ424

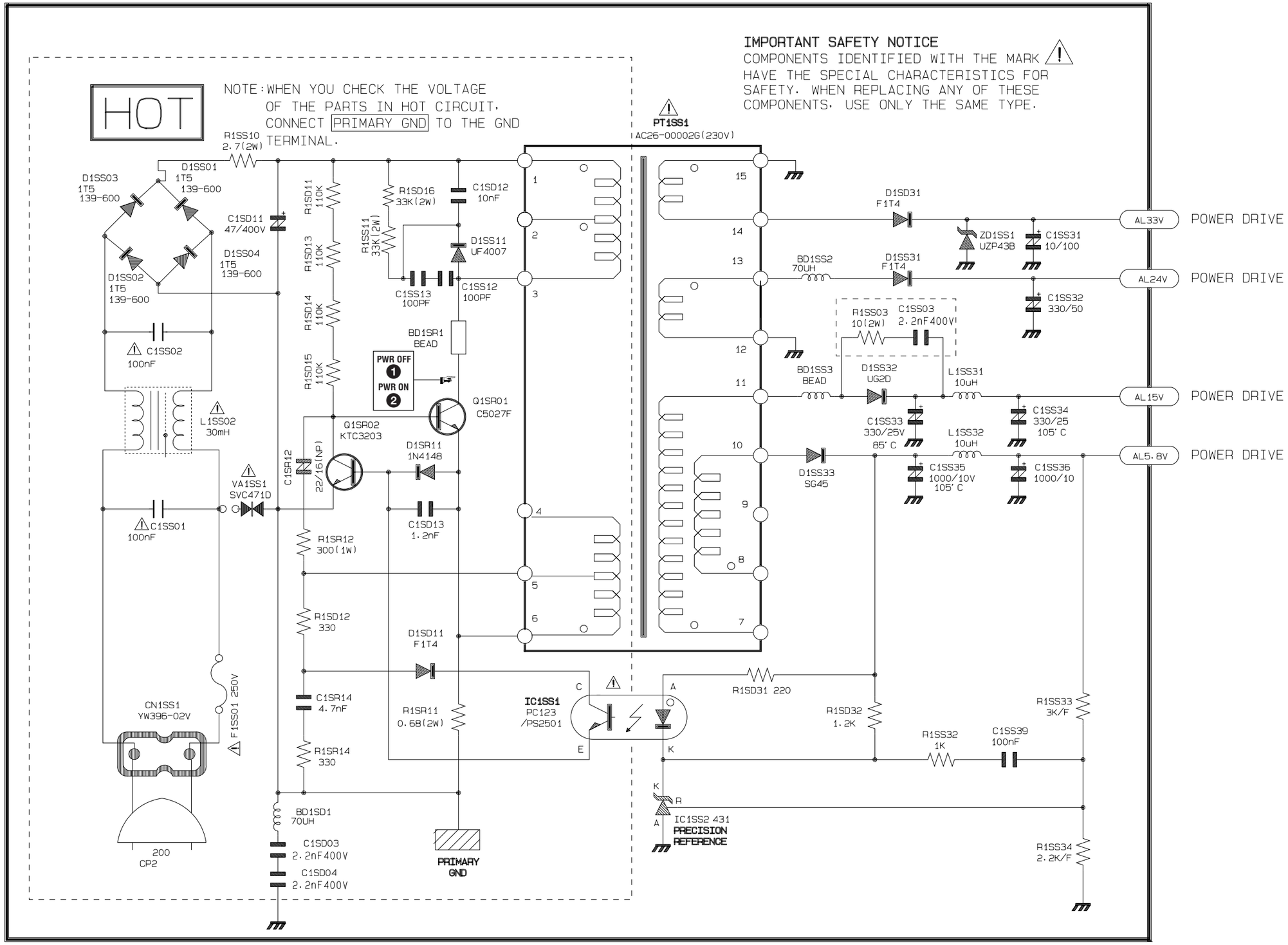
## ◆ BLOCK IDENTIFICATION OF MAIN PCB

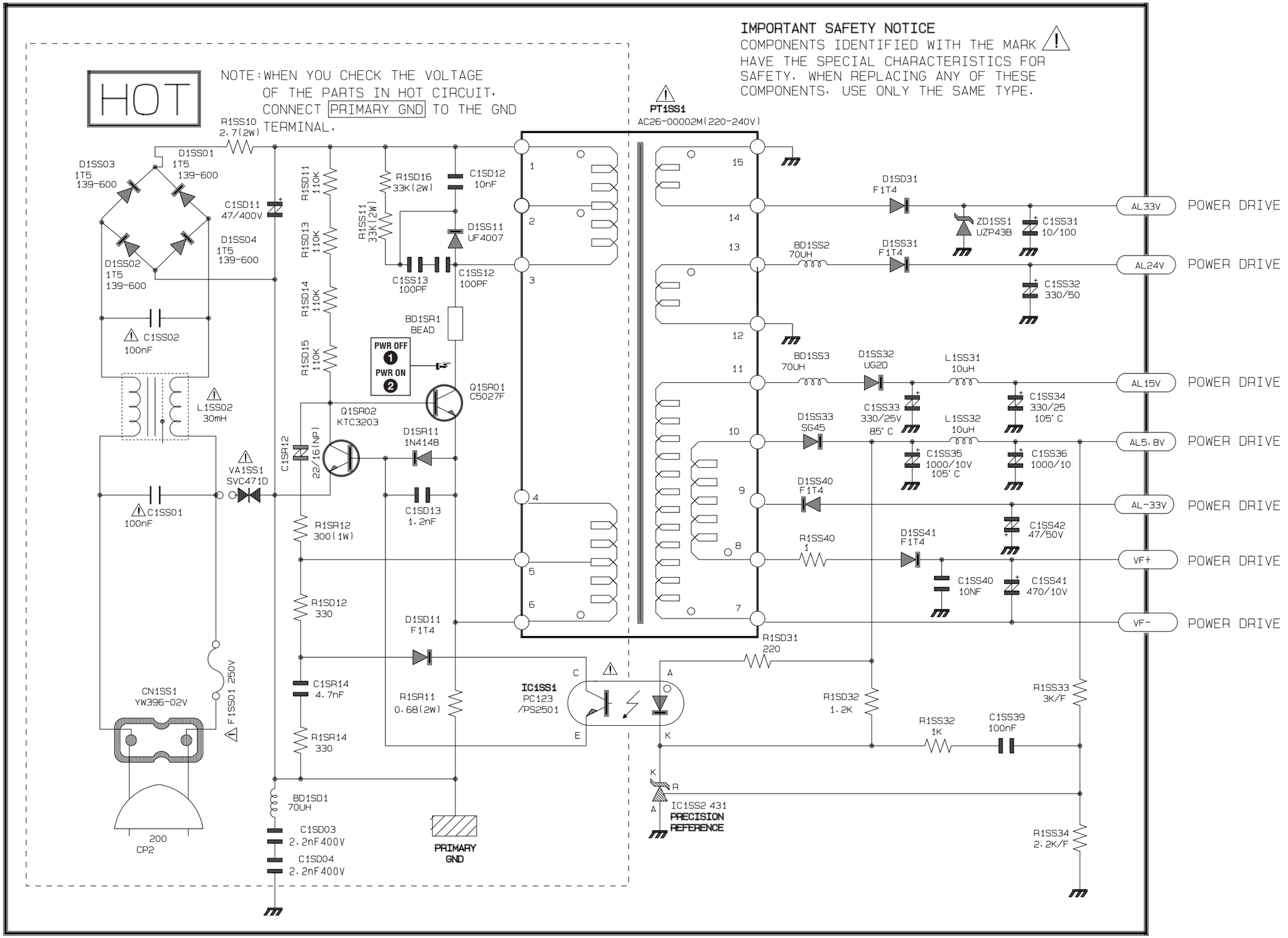


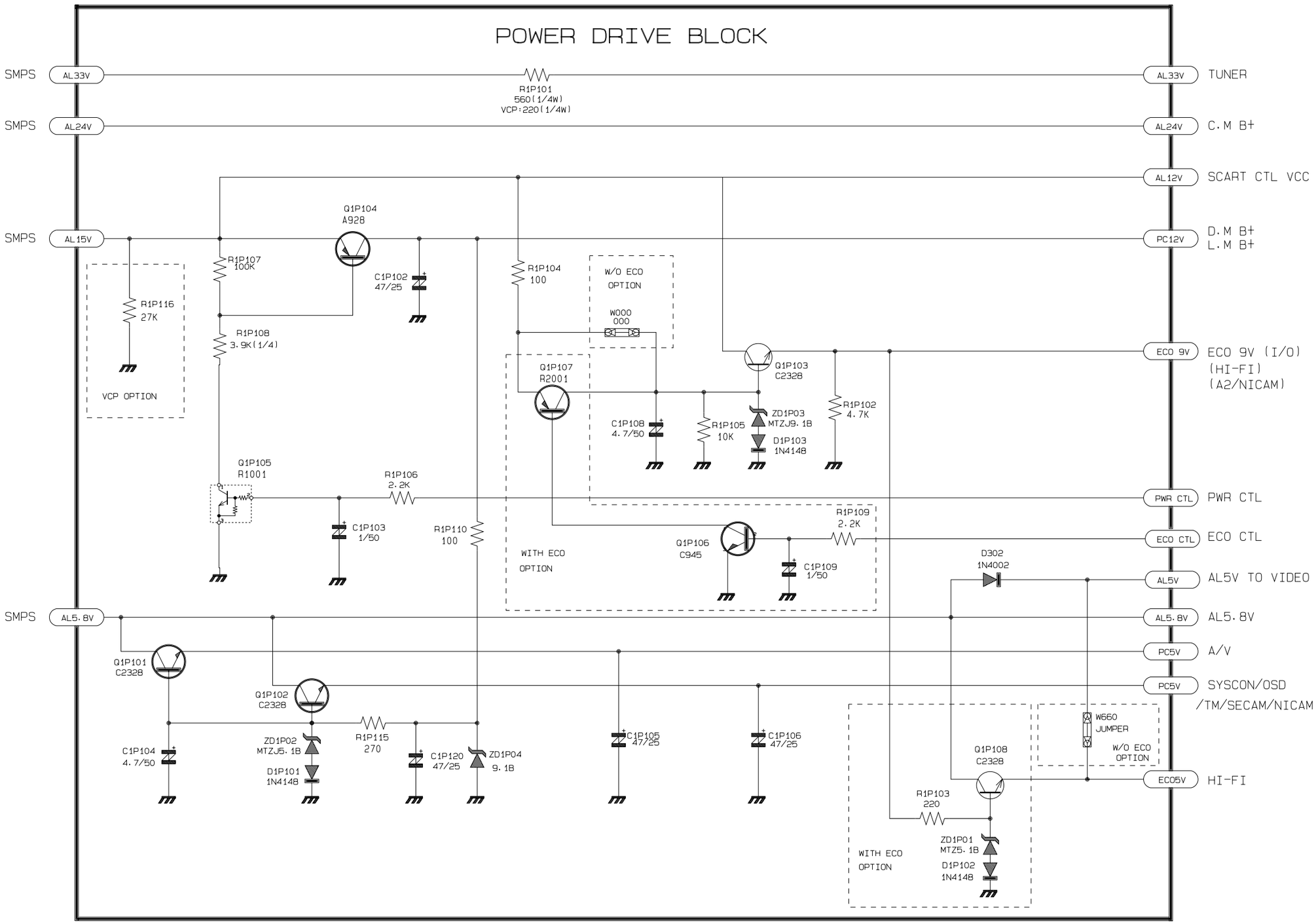

Component Side



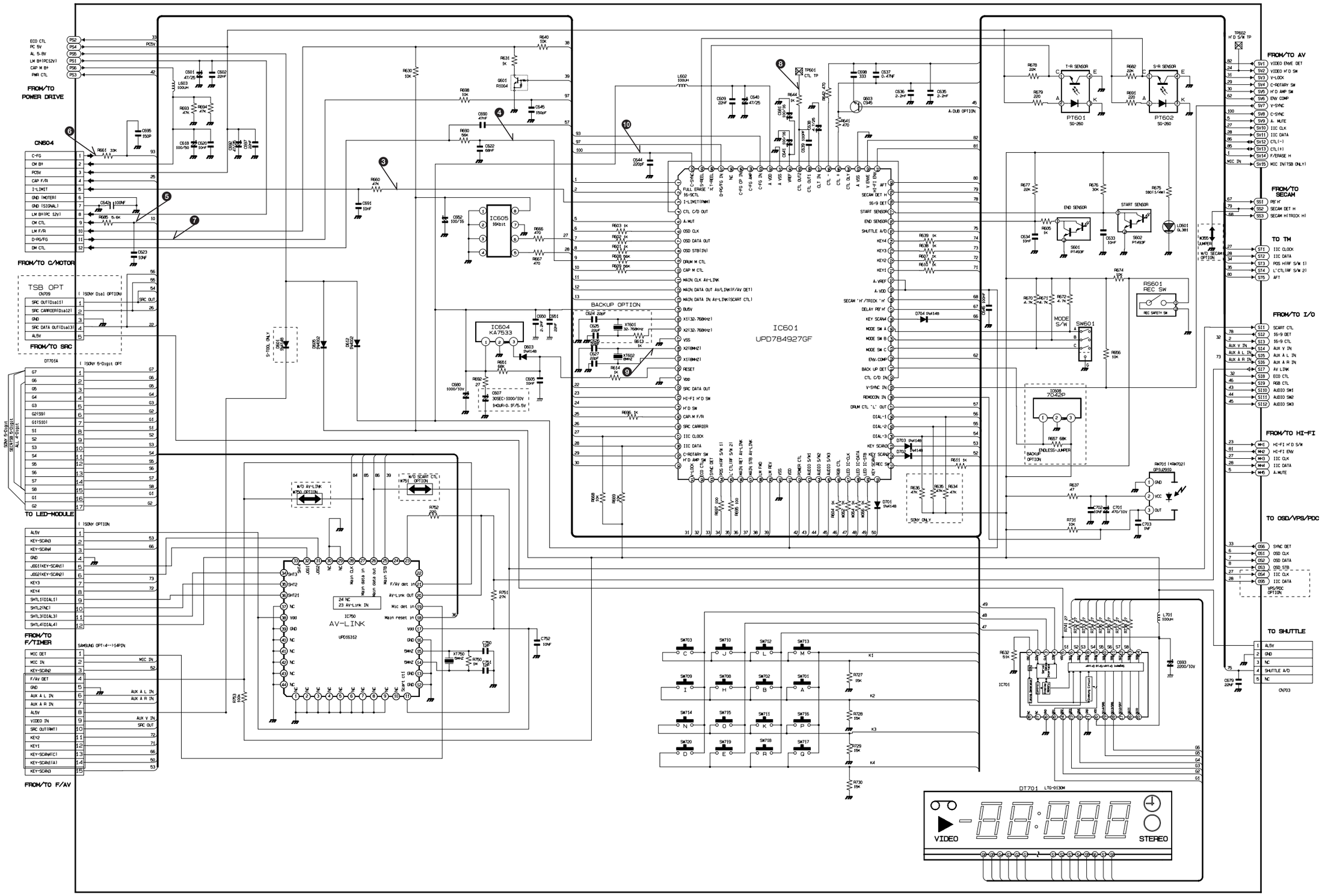

Conductor Side


HOT
NOTE : WHEN YOU CHECK THE VOLTAGE OF THE PARTS IN HOT CIRCUIT, CONNECT PRIMARY GND TO THE GND TERMINAL.
IMPORTANT SAFETY NOTICE
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.
PT1SS1
AC26-00002G(230V)
R1SS10 2.7(2W)
D1SS01 1T5 139-600
D1SS03 1T5 139-600
D1SS04 1T5 139-600
D1SS02 1T5 139-600
C1SD11 47/400V
C1SS02 100nF
L1SS02 30mH
C1SS01 100nF
VA1SS1 SVC471D
F1SS01 250V
CN1SS1 YW396-02V
200 CP2
R1SD11 110K
R1SD13 110K
R1SD14 110K
R1SD15 110K
R1SD16 33K(2W)
R1SS11 33K(2W)
C1SD12 10nF
D1SS11 UF4007
C1SS13 100PF
C1SS12 100PF
BD1SR1 BEAD
PWR OFF
PWR ON
Q1SR01 C5027F
Q1SR02 KTC3203
C1SR12 22/16(NP)
D1SR11 1N4148
C1SD13 1.2nF
R1SR12 300(1W)
R1SD12 330
D1SD11 F1T4
C1SR14 4.7nF
R1SR14 330
R1SR11 0.68(2W)
BD1SD1 70UH
C1SD03 2.2nF400V
C1SD04 2.2nF400V
PRIMARY GND
IC1SS1 PC123 /PS2501
R1SD31 220
R1SD32 1.2K
R1SS32 1K
C1SS39 100nF
R1SS33 3K/F
R1SS34 2.2K/F
IC1SS2 431 PRECISION REFERENCE
D1SD31 F1T4
ZD1SS1 UZP43B
C1SS31 10/100
AL33V POWER DRIVE
BD1SS2 70UH
D1SS31 F1T4
C1SS32 330/50
AL24V POWER DRIVE
R1SS03 10(2W)
C1SS03 2.2nF400V
BD1SS3 BEAD
D1SS32 UG2D
L1SS31 10uH
C1SS33 330/25V 85° C
C1SS34 330/25 105° C
AL15V POWER DRIVE
L1SS32 10uH
C1SS35 1000/10V 105° C
C1SS36 1000/10
AL5.8V POWER DRIVE
D1SS33 SG45

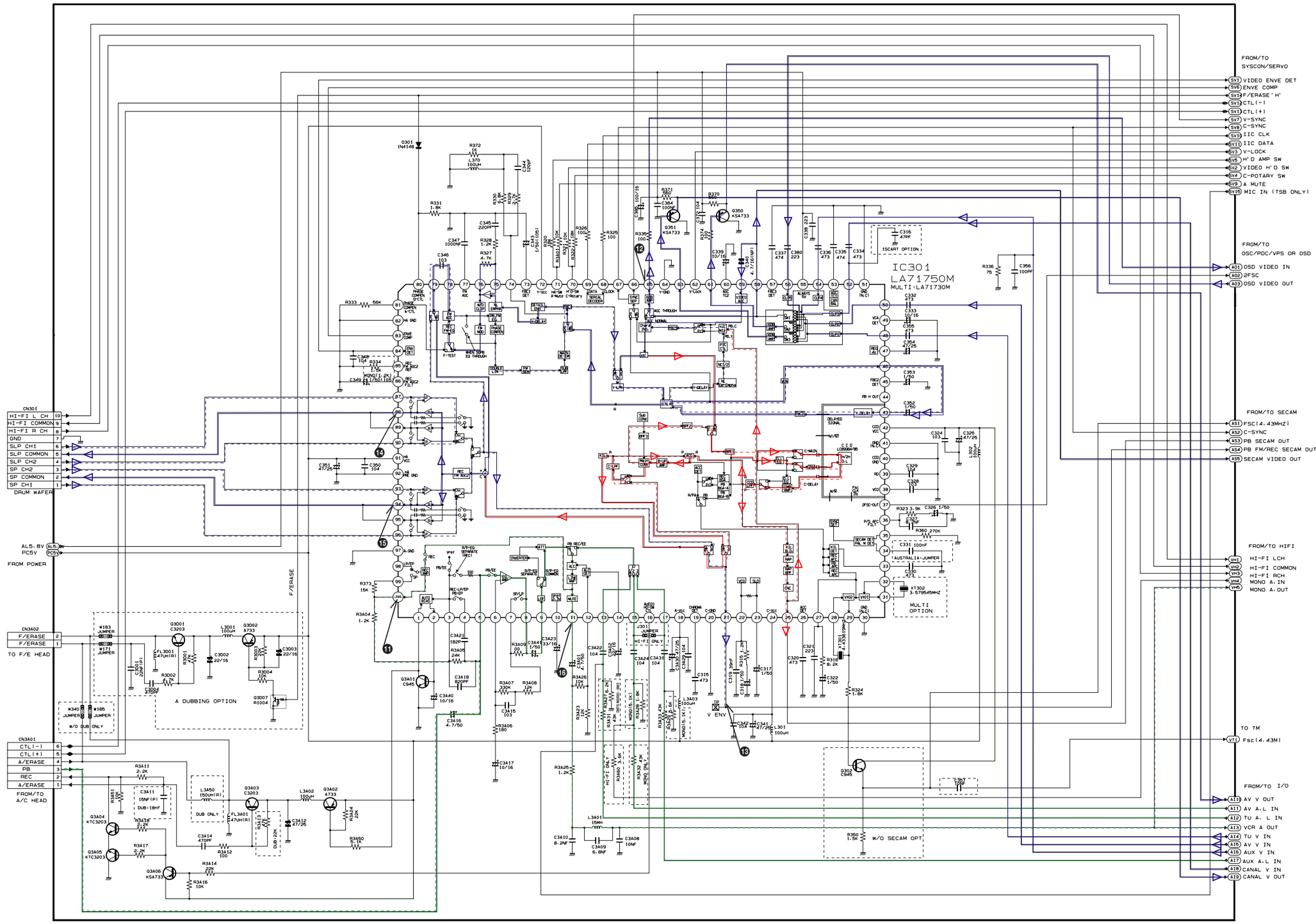

HOT
NOTE: WHEN YOU CHECK THE VOLTAGE OF THE PARTS IN HOT CIRCUIT, CONNECT PRIMARY GND TO THE GND TERMINAL.
IMPORTANT SAFETY NOTICE
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.
PT1SS1
AC26-00002M(220-240V)
R1SS10 2.7(2W)
D1SS01 1T5 139-600
D1SS02 1T5 139-600
D1SS03 1T5 139-600
D1SS04 1T5 139-600
C1SD11 47/400V
C1SS02 100nF
C1SS01 100nF
L1SS02 30mH
VA1SS1 SVC471D
F1SS01 250V
CN1SS1 YW396-02V
200 CP2
R1SD11 110K
R1SD13 110K
R1SD14 110K
R1SD15 110K
R1SD16 33K(2W)
R1SS11 33K(2W)
C1SD12 10nF
D1SS11 UF4007
C1SS13 100PF
C1SS12 100PF
BD1SR1 BEAD
PWR OFF 1
PWR ON 2
Q1SR01 C5027F
Q1SR02 KTC3203
C1SR12 22/16(NP)
D1SR11 1N4148
C1SD13 1.2nF
R1SR12 300(1W)
R1SD12 330
D1SD11 F1T4
C1SR14 4.7nF
R1SR14 330
R1SR11 0.68(2W)
BD1SD1 70UH
C1SD03 2.2nF400V
C1SD04 2.2nF400V
PRIMARY GND
IC1SS1 PC123 /PS2501
R1SD31 220
R1SD32 1.2K
R1SS32 1K
C1SS39 100nF
R1SS33 3K/F
R1SS34 2.2K/F
IC1SS2 431 PRECISION REFERENCE
D1SD31 F1T4
ZD1SS1 UZP43B
C1SS31 10/100
AL33V POWER DRIVE
BD1SS2 70UH
D1SS31 F1T4
C1SS32 330/50
AL24V POWER DRIVE
BD1SS3 70UH
D1SS32 UG2D
L1SS31 10uH
C1SS34 330/25 105' C
AL15V POWER DRIVE
D1SS33 SG45
C1SS33 330/25V 85' C
L1SS32 10uH
C1SS35 1000/10V 105' C
C1SS36 1000/10
AL5.8V POWER DRIVE
D1SS40 F1T4
AL-33V POWER DRIVE
C1SS42 47/50V
R1SS40 1
D1SS41 F1T4
C1SS40 10NF
C1SS41 470/10V
VF+ POWER DRIVE
VF- POWER DRIVE


POWER DRIVE BLOCK
SMPS
AL33V
R1P101
560(1/4W)
VCP:220(1/4W)
AL33V
TUNER
SMPS
AL24V
AL24V
C.M B+
AL12V
SCART CTL VCC
SMPS
AL15V
Q1P104
A928
R1P107
100K
C1P102
47/25
R1P104
100
W/O ECO
OPTION
W000
000
PC12V
D.M B+
L.M B+
R1P116
27K
R1P108
3.9K(1/4)
VCP OPTION
Q1P107
R2001
Q1P103
C2328
ECO 9V
ECO 9V (I/O)
(HI-FI)
(A2/NICAM)
C1P108
4.7/50
R1P105
10K
ZD1P03
MTZJ9.1B
D1P103
1N4148
R1P102
4.7K
Q1P105
R1001
R1P106
2.2K
C1P103
1/50
R1P110
100
WITH ECO
OPTION
Q1P106
C945
R1P109
2.2K
C1P109
1/50
PWR CTL
PWR CTL
ECO CTL
ECO CTL
D302
1N4002
AL5V
AL5V TO VIDEO
SMPS
AL5.8V
AL5.8V
Q1P101
C2328
PC5V
A/V
Q1P102
C2328
PC5V
SYSCON/OSD
/TM/SECAM/NICAM
R1P115
270
C1P104
4.7/50
ZD1P02
MTZJ5.1B
D1P101
1N4148
C1P120
47/25
ZD1P04
9.1B
C1P105
47/25
C1P106
47/25
W660
JUMPER
W/O ECO
OPTION
Q1P108
C2328
ECO5V
HI-FI
R1P103
220
ZD1P01
MTZ5.1B
D1P102
1N4148
WITH ECO
OPTION

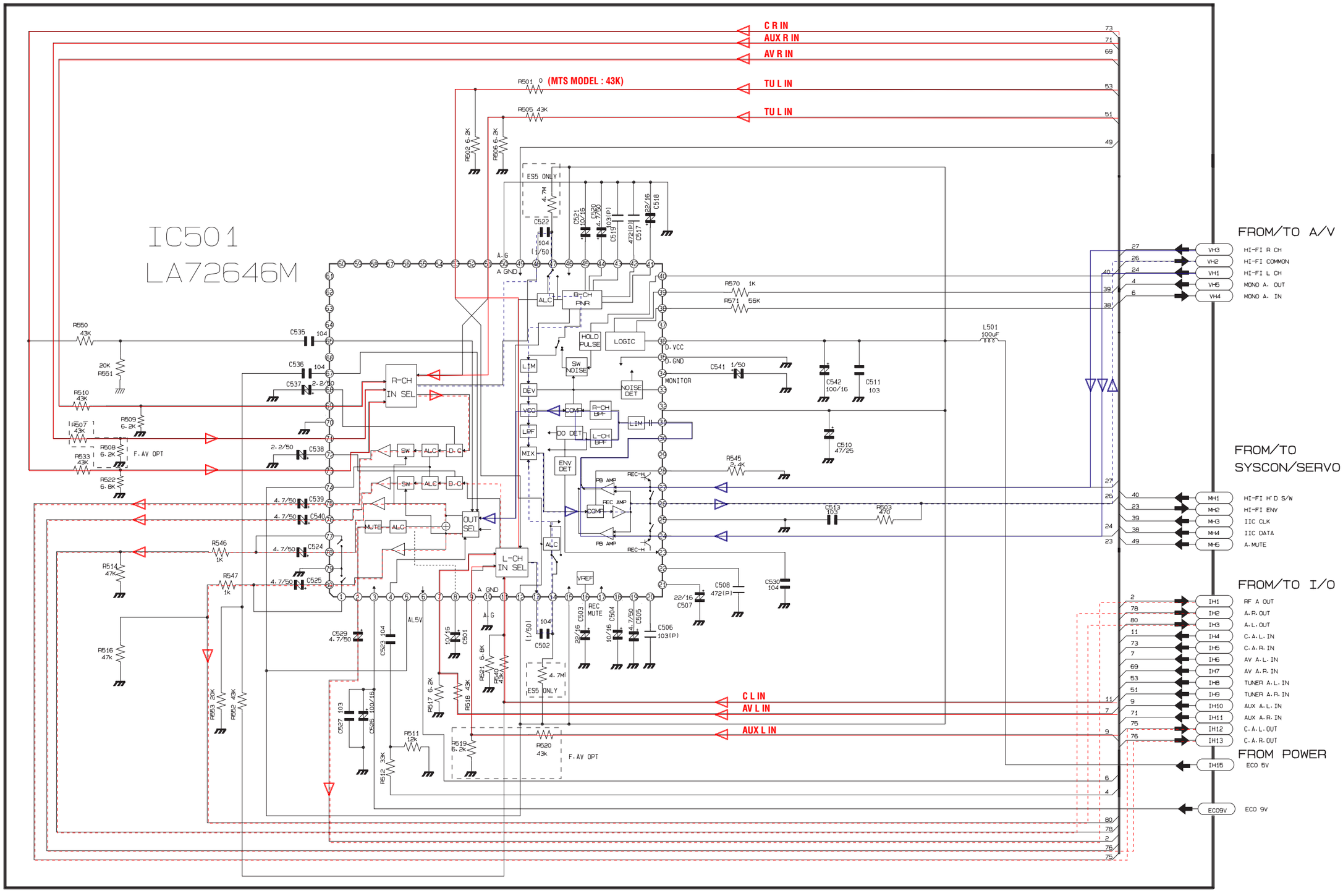
# 4-4 SYSTEM CONTROL/SERVO



VIDEO SIGNAL IN/OUT LUMINANCE RECORDING ----- LUMINANACE PLAYBACK CHROMA RECORDING ----- CHROMA PLAYBACK AUDIO PROCESS IN ----- AUDIO PROCESS OUT

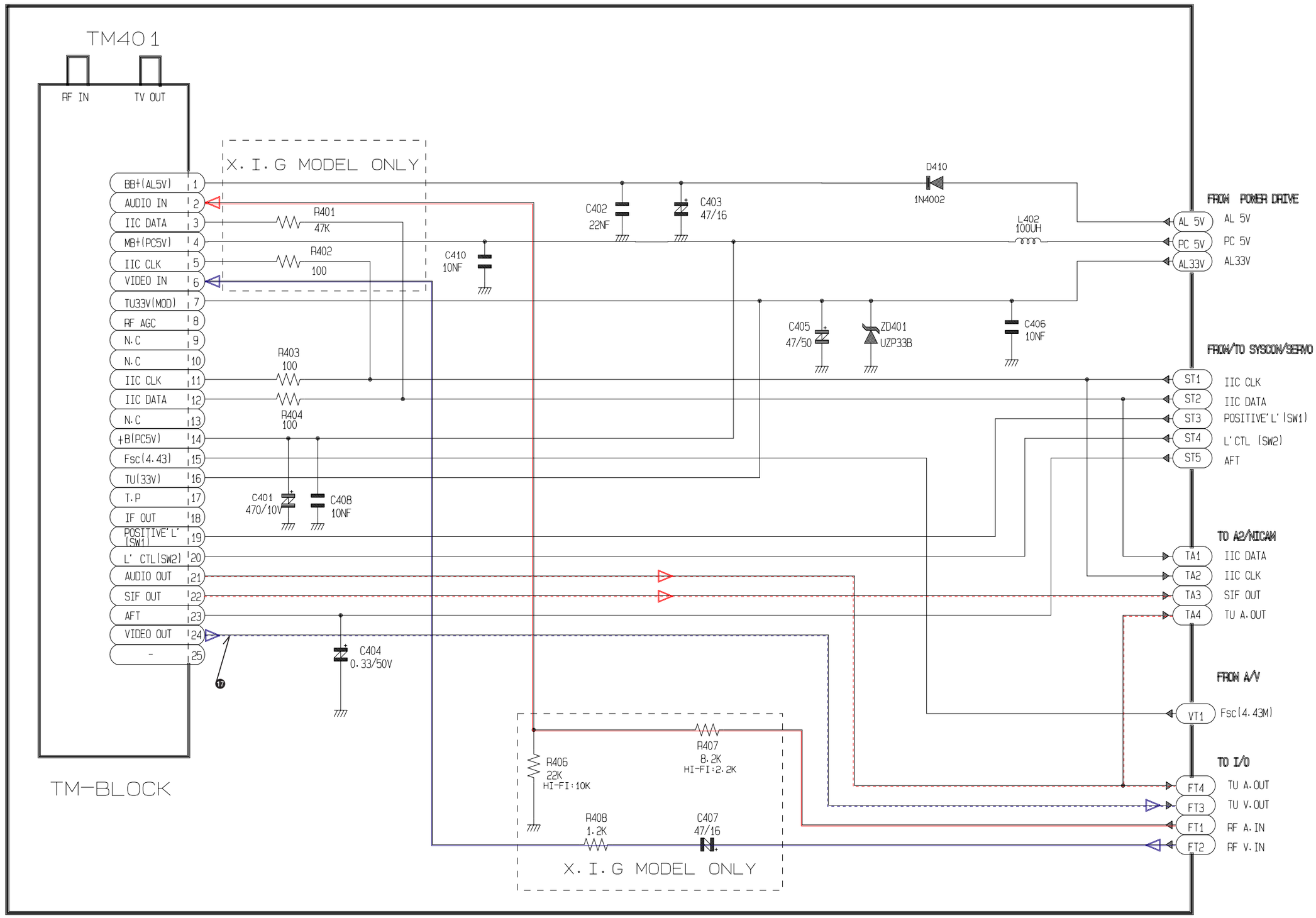


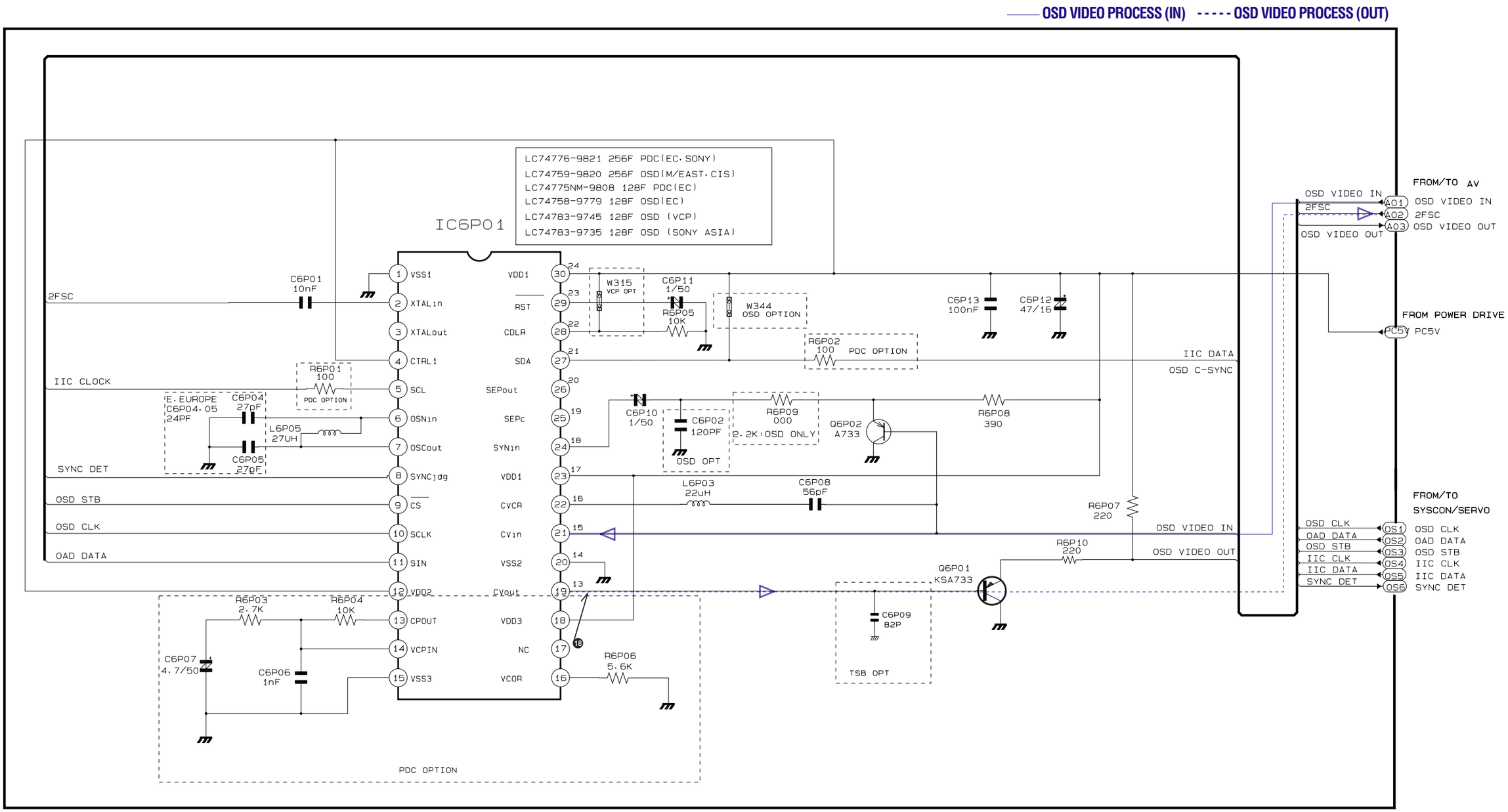
AUDIO PB PROCESS ----- AUDIO REC PROCESS —— AUDIO PROCESS (IN) ----- AUDIO PROCESS (OUT)

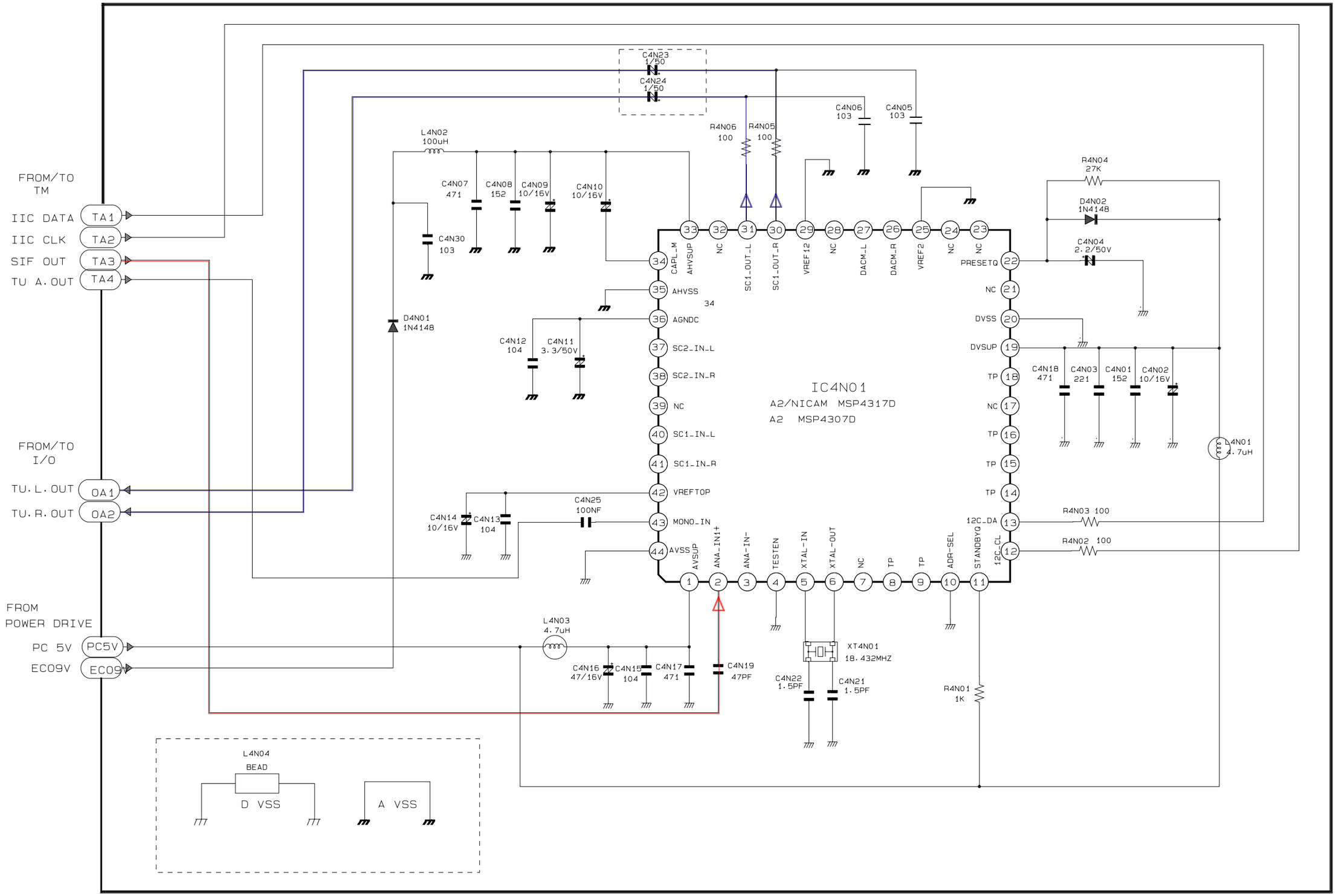


## 4-7 TM-BLOCK

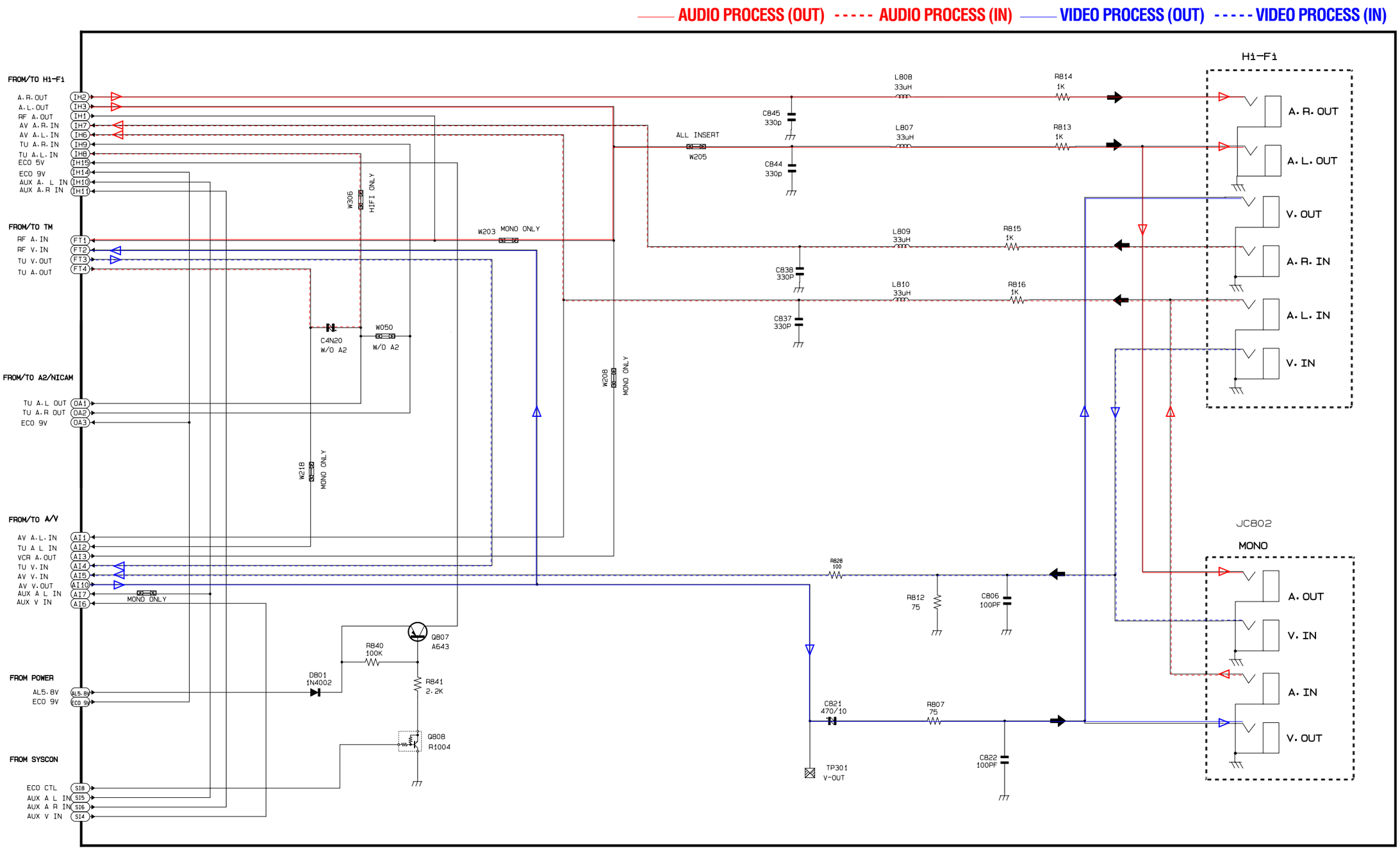
VIDEO PROCESS (IN) - - - - - VIDEO PROCESS (OUT) —— AUDIO PROCESS (IN) - - - - - AUDIO PROCESS (OUT)

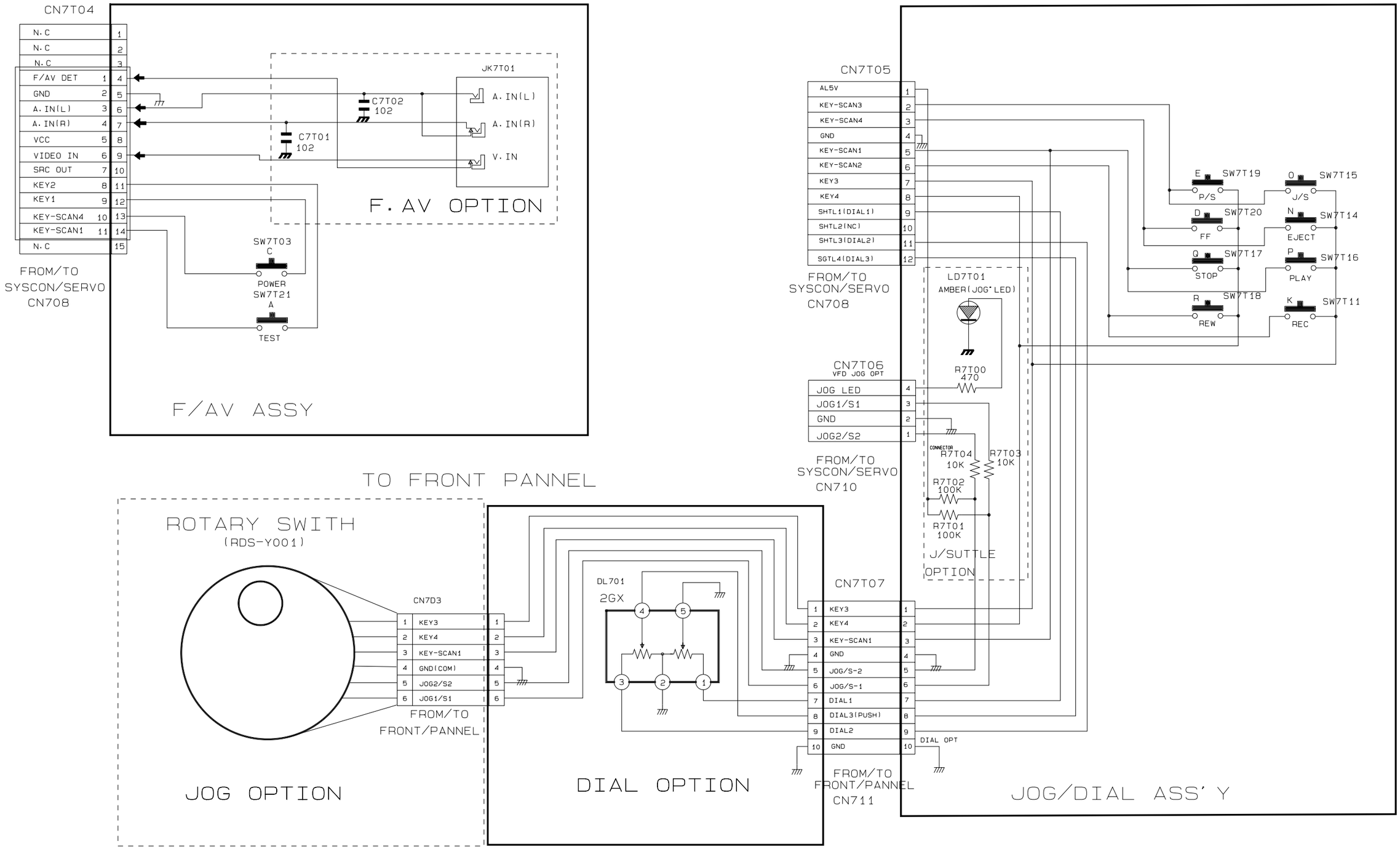



OSD VIDEO PROCESS (IN)
OSD VIDEO PROCESS (OUT)
LC74776-9821 256F PDC(EC.SONY)
LC74759-9820 256F OSD(M/EAST.CIS)
LC74775NM-9808 128F PDC(EC)
LC74758-9779 128F OSD(EC)
LC74783-9745 128F OSD (VCP)
LC74783-9735 128F OSD (SONY ASIA)
IC6P01
1 VSS1
2 XTALin
3 XTALout
4 CTRL1
5 SCL
6 OSNin
7 OSCout
8 SYNCjdg
9 CS
10 SCLK
11 SIN
12 VDD2
13 CPOUT
14 VCPIN
15 VSS3
30 VDD1
29 RST
28 CDLR
27 SDA
26 SEPout
25 SEPc
24 SYNin
23 VDD1
22 CVCR
21 CVin
20 VSS2
19 CVout
18 VDD3
17 NC
16 VCOR
2FSC
C6P01 10nF
IIC CLOCK
R6P01 100
PDC OPTION
E.EUROPE C6P04.05 24PF
C6P04 27pF
L6P05 27UH
C6P05 27pF
SYNC DET
OSD STB
OSD CLK
OAD DATA
R6P03 2.7K
R6P04 10K
C6P07 4.7/50
C6P06 1nF
PDC OPTION
W315 VCP OPT
C6P11 1/50
R6P05 10K
W344 OSD OPTION
C6P13 100nF
C6P12 47/16
R6P02 100 PDC OPTION
IIC DATA
OSD C-SYNC
C6P10 1/50
C6P02 120PF
OSD OPT
R6P09 000
2.2K:OSD ONLY
Q6P02 A733
R6P08 390
L6P03 22uH
C6P08 56pF
R6P07 220
OSD VIDEO IN
R6P10 220
OSD VIDEO OUT
Q6P01 KSA733
C6P09 82P
TSB OPT
FROM/TO AV
OSD VIDEO IN
2FSC
OSD VIDEO OUT
A01 OSD VIDEO IN
A02 2FSC
A03 OSD VIDEO OUT
FROM POWER DRIVE
PC5V
PC5V
FROM/TO SYSCON/SERVO
OSD CLK
OAD DATA
OSD STB
IIC CLK
IIC DATA
SYNC DET
OS1 OSD CLK
OS2 OAD DATA
OS3 OSD STB
OS4 IIC CLK
OS5 IIC DATA
OS6 SYNC DET


FROM/TO TM
IIC DATA
IIC CLK
SIF OUT
TU A.OUT
TA1
TA2
TA3
TA4
FROM/TO I/O
TU.L.OUT
TU.R.OUT
OA1
OA2
FROM POWER DRIVE
PC 5V
EC09V
PC5V
EC09V
C4N23 1/50
C4N24 1/50
L4N02 100uH
C4N07 471
C4N08 152
C4N09 10/16V
C4N10 10/16V
C4N30 103
D4N01 1N4148
C4N12 104
C4N11 3.3/50V
C4N14 10/16V
C4N13 104
C4N25 100NF
R4N06 100
R4N05 100
C4N06 103
C4N05 103
R4N04 27K
D4N02 1N4148
C4N04 2.2/50V
C4N18 471
C4N03 221
C4N01 152
C4N02 10/16V
L4N01 4.7uH
R4N03 100
R4N02 100
L4N03 4.7uH
C4N16 47/16V
C4N15 104
C4N17 471
C4N19 47PF
XT4N01 18.432MHZ
C4N22 1.5PF
C4N21 1.5PF
R4N01 1K
IC4N01
A2/NICAM MSP4317D
A2 MSP4307D
CAPL_M
AHVSUP
NC
SC1_OUT_L
SC1_OUT_R
VREF12
NC
DACM_L
DACM_R
VREF2
NC
NC
PRESETQ
AHVSS
AGNDC
SC2_IN_L
SC2_IN_R
NC
SC1_IN_L
SC1_IN_R
VREFTOP
MONO_IN
AVSS
AVSUP
ANA_IN1+
ANA_IN-
TESTEN
XTAL_IN
XTAL_OUT
NC
TP
TP
ADR-SEL
STANDBYQ
I2C_CL
I2C_DA
DVSUP
DVSS
NC
TP
TP
TP
TP
L4N04
BEAD
D VSS
A VSS

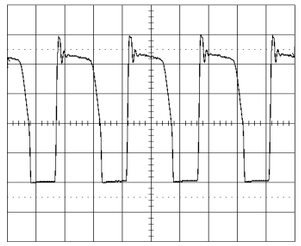
# 4-10 INPUT-OUTPUT (RCA JACK)



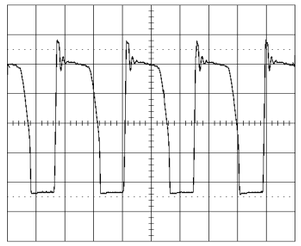

CN7T04
N.C 1
N.C 2
N.C 3
F/AV DET 1 4
GND 2 5
A.IN(L) 3 6
A.IN(R) 4 7
VCC 5 8
VIDEO IN 6 9
SRC OUT 7 10
KEY2 8 11
KEY1 9 12
KEY-SCAN4 10 13
KEY-SCAN1 11 14
N.C 15
FROM/TO SYSCON/SERVO CN708
JK7T01
A.IN(L)
A.IN(R)
V.IN
C7T02 102
C7T01 102
F.AV OPTION
SW7T03 C
POWER
SW7T21 A
TEST
F/AV ASSY
CN7T05
AL5V 1
KEY-SCAN3 2
KEY-SCAN4 3
GND 4
KEY-SCAN1 5
KEY-SCAN2 6
KEY3 7
KEY4 8
SHTL1(DIAL1) 9
SHTL2(NC) 10
SHTL3(DIAL2) 11
SGTL4(DIAL3) 12
FROM/TO SYSCON/SERVO CN708
LD7T01 AMBER(JOG*LED)
R7T00 470
E SW7T19 P/S
O SW7T15 J/S
D SW7T20 FF
N SW7T14 EJECT
Q SW7T17 STOP
P SW7T16 PLAY
R SW7T18 REW
K SW7T11 REC
CN7T06 VFD JOG OPT
JOG LED 4
JOG1/S1 3
GND 2
JOG2/S2 1
FROM/TO SYSCON/SERVO CN710
CONNECTOR
R7T04 10K
R7T03 10K
R7T02 100K
R7T01 100K
J/SUTTLE OPTION
TO FRONT PANNEL
ROTARY SWITH (RDS-Y001)
CN7D3
1 KEY3 1
2 KEY4 2
3 KEY-SCAN1 3
4 GND(COM) 4
5 JOG2/S2 5
6 JOG1/S1 6
FROM/TO FRONT/PANNEL
JOG OPTION
DL701 2GX
4 5 3 2 1
DIAL OPTION
CN7T07
1 KEY3 1
2 KEY4 2
3 KEY-SCAN1 3
4 GND 4
5 JOG/S-2 5
6 JOG/S-1 6
7 DIAL1 7
8 DIAL3(PUSH) 8
9 DIAL2 9
10 GND 10
DIAL OPT
FROM/TO FRONT/PANNEL CN711
JOG/DIAL ASS'Y

## S.M.P.S. BLOCK

❶ Q1SR01-COLLECTOR
POWER OFF/380Vp-p

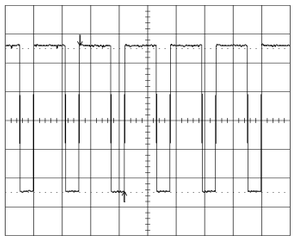


❷ Q1SR01-COLLECTOR
POWER ON/400Vp-p

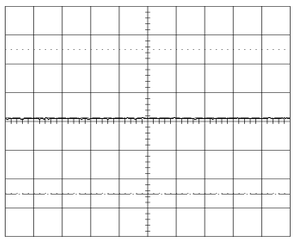


## SYSTEM CONTROL/SERVO BLOCK

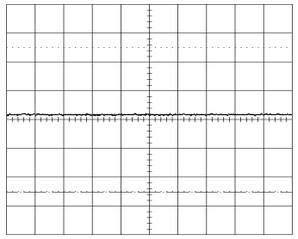
❸ IC601-3
PB/5.1Vp-p



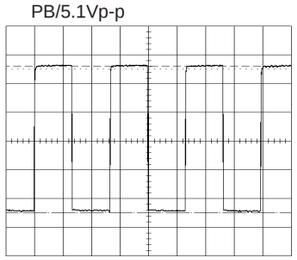
❹ IC601-9
PB/2.7Vp-p



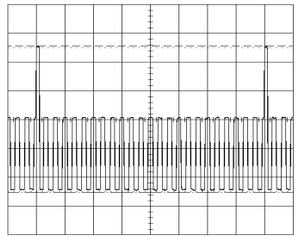
❺ IC601-10
PB/2.7Vp-p



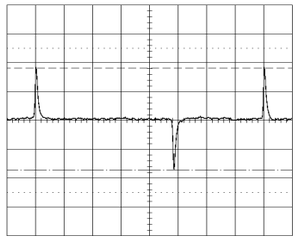
❻ CN604-93
PB/5.1Vp-p



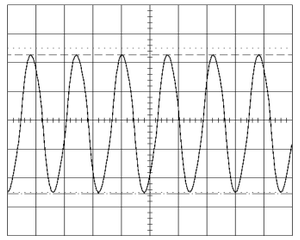
❼ IC610-97
PB/5.1V



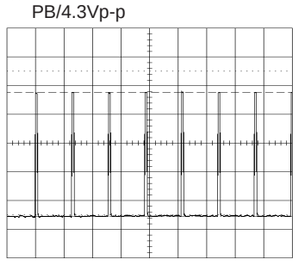
❽ TP601-89
PB/3.6Vp-p



❾ IC601-18
4.8Vp-p

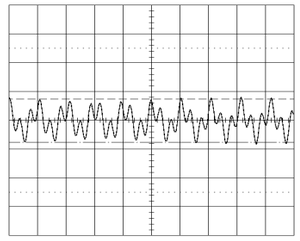


❿ IC601-100
PB/4.3Vp-p

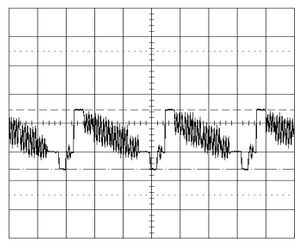


## AUDIO/VIDEO BLOCK

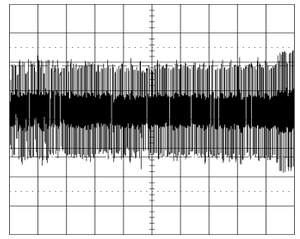
⓫ IC301-100
REC/1.5Vp-p



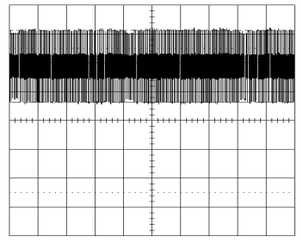
⓬ IC301-65
PB/2.1Vp-p



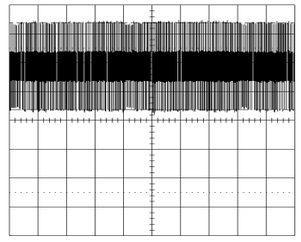
⓭ IC301-21
PB/320mVp-p



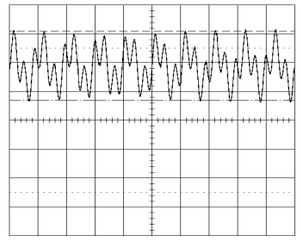
⓮ IC301-88
REC(LP)/2.5Vp-p



⓯ IC301-94
REC(SP)/3.0Vp-p

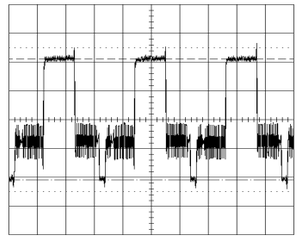


⓰ IC301-11
REC/102Vp-p



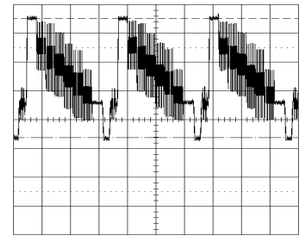
## TM BLOCK

⓱ TM401-24
0.9Vp-p



## O. S. D. BLOCK

⓲ IC6P01-19
2.1Vp-p



## LOGIC BLOCK

| PIN / MODE | PLAY | STOP | REC |
|---|---|---|---|
| IC601 | UPD784927GF | | |
| 1 | 0.0 | 0.0 | 4.8 |
| 2 | 0.0 | 0.0 | 0.0 |
| 3 | 3.6 | 0.0 | 3.6 |
| 4 | 3.1 | 5.2 | 0.0 |
| 5 | 0.0 | 5.2 | 5.1 |
| 6 | 5.1 | 5.2 | 5.1 |
| 7 | 5.2 | 5.2 | 5.1 |
| 8 | 4.2 | 4.1 | 4.1 |
| 9 | 2.6 | 2.6 | 2.6 |
| 10 | 2.7 | 5.2 | 2.7 |
| 11 | 5.2 | 5.2 | 5.2 |
| 12 | 2.1 | 0.3 | 2.3 |
| 13 | 2.3 | 2.1 | 2.2 |
| 14 | 5.2 | 5.2 | 5.2 |
| 15 | 2.1 | 2.2 | 2.1 |
| 16 | 2.5 | 2.5 | 2.4 |
| 17 | 0.0 | 0.0 | 0.0 |
| 18 | 2.4 | 2.4 | 2.4 |
| 19 | 2.2 | 2.2 | 2.8 |
| 20 | 5.2 | 5.2 | 5.2 |
| 21 | 0.0 | 0.0 | 0.0 |
| 22 | 0.0 | 0.0 | 0.0 |
| 23 | 2.3 | 2.7 | 0.0 |
| 24 | 2.7 | 2.3 | 2.8 |
| 25 | 0.0 | 0.0 | 0.0 |
| 26 | 0.0 | 0.0 | 0.0 |
| 27 | 4.6 | 4.6 | 4.6 |
| 28 | 4.6 | 4.6 | 4.5 |
| 29 | 2.4 | 2.8 | 2.8 |
| 30 | 0.0 | 5.2 | 0.0 |
| 31 | 0.0 | 0.0 | 0.0 |
| 32 | 4.7 | 4.7 | 4.7 |
| 33 | 5.1 | 0.0 | 0.0 |
| 34 | 1.2 | 1.4 | 0.7 |
| 35 | 0.0 | 0.0 | 0.0 |
| 36 | 5.2 | 5.2 | 5.2 |
| 37 | 1.4 | 1.3 | 0.7 |
| 38 | 0.0 | 0.0 | 5.1 |
| 39 | 0.0 | 0.0 | 0.0 |
| 40 | 0.0 | 0.0 | 0.0 |
| 41 | 5.2 | 5.2 | 5.2 |
| 42 | 5.2 | 5.1 | 5.1 |
| 43 | 0.0 | 0.0 | 5.1 |
| 44 | 0.0 | 0.0 | 0.0 |
| 45 | 0.0 | 0.0 | 0.0 |
| 46 | 5.2 | 5.1 | 5.1 |
| 47 | 5.2 | 5.2 | 5.2 |
| 48 | 5.2 | 5.2 | 5.2 |
| 49 | 5.2 | 5.2 | 5.2 |
| 50 | 0.1 | 0.1 | 5.2 |

| PIN / MODE | PLAY | STOP | REC |
|---|---|---|---|
| IC601 | UPD784927GF | | |
| 51 | 0.0 | 0.0 | 0.0 |
| 52 | 0.0 | 0.1 | 0.1 |
| 53 | 5.2 | 0.1 | 0.2 |
| 54 | 5.2 | 5.2 | 5.2 |
| 55 | 5.2 | 5.2 | 5.2 |
| 56 | 5.2 | 5.2 | 5.2 |
| 57 | 0.0 | 0.0 | 0.0 |
| 58 | 5.2 | 5.2 | 5.2 |
| 59 | 5.1 | 5.2 | 5.2 |
| 60 | 3.3 | 5.2 | 5.2 |
| 61 | 5.2 | 5.2 | 5.2 |
| 62 | 1.2 | 2.5 | 1.5 |
| 63 | 0.0 | 0.0 | 0.0 |
| 64 | 5.2 | 0.0 | 5.2 |
| 65 | 0.0 | 0.0 | 0.0 |
| 66 | 4.7 | 4.8 | 4.7 |
| 67 | 5.2 | 0.0 | 0.0 |
| 68 | 0.0 | 0.0 | 0.0 |
| 69 | 5.2 | 0.0 | 5.2 |
| 70 | 5.2 | 1.4 | 5.2 |
| 71 | 0.0 | 0.0 | 0.0 |
| 72 | 0.0 | 0.0 | 0.0 |
| 73 | 0.0 | 0.0 | 0.0 |
| 74 | 0.0 | 0.0 | 0.0 |
| 75 | 1.6 | 1.2 | 1.5 |
| 76 | 5.2 | 5.2 | 5.2 |
| 77 | 5.1 | 5.2 | 5.1 |
| 78 | 0.0 | 0.0 | 0.0 |
| 79 | 0.0 | 0.4 | 0.4 |
| 80 | 3.7 | 3.7 | 3.7 |
| 81 | 0.1 | 0.2 | 0.2 |
| 82 | 2.3 | 0.6 | 0.0 |
| 83 | 1.3 | 0.0 | 0.0 |
| 84 | 1.4 | 1.8 | 0.0 |
| 85 | 2.6 | 2.6 | 2.8 |
| 86 | 2.6 | 2.6 | 2.2 |
| 87 | 2.6 | 2.6 | 2.6 |
| 88 | 2.6 | 2.6 | 2.6 |
| 89 | 2.6 | 2.6 | 0.0 |
| 90 | 2.6 | 2.6 | 2.6 |
| 91 | 0.0 | 0.0 | 0.0 |
| 92 | 5.2 | 5.2 | 5.2 |
| 93 | 2.6 | 5.1 | 2.6 |
| 94 | 1.4 | 1.7 | 1.4 |
| 95 | 1.3 | 1.5 | 1.3 |
| 96 | 1.4 | 1.7 | 1.3 |
| 97 | 1.3 | 0.1 | 1.3 |
| 98 | 0.1 | 0.1 | 0.1 |
| 99 | 0.1 | 0.1 | 0.3 |
| 100 | 0.2 | 0.2 | 0.2 |

| PIN / MODE | PLAY | STOP | REC |
|---|---|---|---|
| IC605 | 24LCXX | | |
| 1 | 0.0 | 0.0 | 0.0 |
| 2 | 0.0 | 0.0 | 0.0 |
| 3 | 0.0 | 0.0 | 0.0 |
| 4 | 0.0 | 0.0 | 0.0 |
| 5 | 5.2 | 5.2 | 5.2 |
| 6 | 0.0 | 0.0 | 0.0 |
| 7 | 4.6 | 4.7 | 4.7 |
| 8 | 4.7 | 4.6 | 4.6 |
| IC604 | KA7533/T572K | | |
| 1 | 5.2 | 5.2 | 5.2 |
| 2 | 0.0 | 0.0 | 0.0 |
| 3 | 5.0 | 5.1 | 5.0 |

## AV BLOCK

| PIN / MODE | PLAY | STOP | REC |
|---|---|---|---|
| IC301 | LA71750M/LA71730M | | |
| 1 | 5.2 | 5.2 | 0.7 |
| 2 | 0.0 | 0.0 | 0.6 |
| 3 | 2.3 | 2.3 | 2.4 |
| 4 | 0.3 | 0.4 | 0.8 |
| 5 | 2.3 | 2.3 | 2.3 |
| 6 | 2.3 | 2.3 | 2.2 |
| 7 | 2.3 | 2.3 | 2.2 |
| 8 | 2.3 | 2.3 | 2.2 |
| 9 | 2.2 | 2.2 | 2.2 |
| 10 | 2.3 | 2.2 | 2.3 |
| 11 | 2.4 | 2.3 | 2.3 |
| 12 | 0.0 | 0.0 | 0.0 |
| 13 | 2.2 | 2.2 | 2.2 |
| 14 | 0.0 | 0.0 | 0.0 |
| 15 | 2.3 | 2.3 | 2.2 |
| 16 | 0.2 | 5.2 | 5.1 |
| 17 | 2.3 | 2.3 | 2.2 |
| 18 | 5.2 | 5.2 | 5.1 |
| 19 | 4.1 | 4.1 | 4.0 |
| 20 | 0.0 | 0.0 | 0.0 |
| 21 | 1.9 | 3.2 | 3.2 |
| 22 | 2.6 | 2.6 | 2.6 |
| 23 | 2.6 | 2.6 | 2.6 |
| 24 | 5.0 | 5.0 | 5.0 |
| 25 | 3.5 | 0.1 | 0.1 |
| 26 | 1.3 | 1.5 | 1.5 |
| 27 | 2.1 | 2.1 | 2.1 |
| 28 | 4.0 | 4.1 | 4.0 |
| 29 | 2.6 | 2.6 | 2.7 |
| 30 | 0.4 | 0.0 | 0.0 |
| 31 | 1.4 | 1.3 | 1.2 |
| 32 | 4.7 | 4.7 | 4.7 |
| 33 | 2.9 | 3.0 | 2.9 |
| 34 | 0.0 | 0.0 | 0.0 |
| 35 | 2.0 | 2.0 | 2.0 |
| 36 | 3.0 | 3.0 | 3.0 |
| 37 | 1.9 | 2.0 | 1.9 |
| 38 | 2.1 | 2.1 | 2.0 |
| 39 | 9.5 | 9.5 | 9.4 |
| 40 | 0.0 | 0.0 | 0.0 |
| 41 | 0.0 | 0.0 | 0.0 |
| 42 | 5.1 | 5.2 | 5.1 |
| 43 | 2.4 | 2.4 | 2.4 |
| 44 | 4.1 | 0.0 | 0.0 |
| 45 | 2.5 | 2.5 | 2.5 |
| 46 | 2.6 | 2.7 | 4.6 |
| 47 | 4.2 | 4.2 | 4.2 |
| 48 | 2.9 | 3.0 | 3.0 |
| 49 | 3.8 | 3.0 | 3.0 |
| 50 | 1.9 | 1.9 | 1.9 |

| PIN / MODE | PLAY | STOP | REC |
|---|---|---|---|
| IC301 | LA71750M/LA71730M | | |
| 51 | 0.0 | 0.0 | 0.0 |
| 52 | 1.9 | 1.9 | 1.9 |
| 53 | 2.4 | 2.4 | 2.4 |
| 54 | 1.9 | 1.9 | 1.9 |
| 55 | 5.2 | 5.2 | 5.2 |
| 56 | 2.2 | 2.3 | 2.3 |
| 57 | 2.2 | 2.0 | 2.0 |
| 58 | 2.8 | 3.1 | 3.1 |
| 59 | 3.0 | 2.9 | 2.9 |
| 60 | 1.6 | 1.5 | 1.5 |
| 61 | 1.7 | 19.0 | 1.9 |
| 62 | 0.0 | 0.0 | 0.0 |
| 63 | 1.2 | 1.2 | 1.2 |
| 64 | 0.0 | 0.0 | 0.0 |
| 65 | 1.5 | 1.8 | 1.8 |
| 66 | 5.2 | 5.2 | 5.2 |
| 67 | 0.2 | 0.2 | 0.2 |
| 68 | 4.7 | 4.7 | 4.7 |
| 69 | 4.5 | 4.7 | 4.5 |
| 70 | 2.8 | 5.2 | 2.8 |
| 71 | 0.0 | 3.3 | 3.3 |
| 72 | 5.0 | 5.0 | 5.0 |
| 73 | 1.9 | 2.2 | 2.2 |
| 74 | 2.6 | 2.5 | 2.5 |
| 75 | 0.7 | 2.4 | 2.4 |
| 76 | 0.8 | 2.4 | 2.4 |
| 77 | 1.6 | 1.5 | 1.5 |
| 78 | 3.4 | 2.6 | 2.5 |
| 79 | 1.9 | 1.9 | 2.5 |
| 80 | 0.9 | 0.9 | 4.2 |
| 81 | 1.1 | 1.1 | 1.1 |
| 82 | 0.0 | 0.0 | 0.0 |
| 83 | 2.6 | 0.7 | 0.0 |
| 84 | 2.7 | 0.6 | 0.0 |
| 85 | 0.0 | 0.0 | 1.0 |
| 86 | 0.4 | 0.4 | 0.0 |
| 87 | 0.7 | 1.9 | 2.5 |
| 88 | 0.7 | 1.9 | 0.7 |
| 89 | 0.7 | 1.9 | 0.7 |
| 90 | 0.7 | 1.9 | 0.7 |
| 91 | 5.2 | 5.2 | 4.1 |
| 92 | 0.0 | 0.0 | 0.0 |
| 93 | 1.9 | 1.9 | 4.3 |
| 94 | 1.9 | 1.9 | 4.3 |
| 95 | 1.9 | 1.9 | 4.3 |
| 96 | 1.9 | 1.9 | 4.4 |
| 97 | 0.0 | 0.0 | 0.0 |
| 98 | 2.3 | 2.3 | 2.3 |
| 99 | 2.3 | 2.3 | 2.3 |
| 100 | 2.3 | 2.3 | 2.4 |

## HI-FI BLOCK

| PIN / MODE | PLAY | STOP | REC |
|---|---|---|---|
| IC501 | LA72646M | | |
| 1 | 0.0 | 0.0 | 0.0 |
| 2 | 2.5 | 2.5 | 2.5 |
| 3 | 9.5 | 9.5 | 9.5 |
| 4 | 2.5 | 2.5 | 2.5 |
| 5 | 4.9 | 4.9 | 4.8 |
| 6 | 2.0 | 1.9 | 1.9 |
| 7 | 0.0 | 0.0 | 0.0 |
| 8 | 0.0 | 0.0 | 0.0 |
| 9 | 0.0 | 0.0 | 0.0 |
| 10 | 0.0 | 0.0 | 0.0 |
| 11 | 0.0 | 0.0 | 0.0 |
| 12 | 4.8 | 4.8 | 4.8 |
| 13 | 2.6 | 2.0 | 2.0 |
| 14 | 2.5 | 2.5 | 2.5 |
| 15 | 4.8 | 4.9 | 4.8 |
| 16 | 2.5 | 2.5 | 2.5 |
| 17 | 0.0 | 0.3 | 0.3 |
| 18 | 1.3 | 0.0 | 0.0 |
| 19 | 2.6 | 2.5 | 2.5 |
| 20 | 2.2 | 2.5 | 2.5 |
| 21 | 2.6 | 2.5 | 2.5 |
| 22 | 2.6 | 2.5 | 2.5 |
| 23 | 4.2 | 0.0 | 0.0 |
| 24 | 1.9 | 0.1 | 3.9 |
| 25 | 0.0 | 0.0 | 0.0 |
| 26 | 1.9 | 0.1 | 3.9 |
| 27 | 1.9 | 0.1 | 3.9 |
| 28 | 0.0 | 0.5 | 2.1 |
| 29 | 0.0 | 0.0 | 0.0 |
| 30 | 2.1 | 4.1 | 3.9 |
| 31 | 2.3 | 4.1 | 3.9 |
| 32 | 4.8 | 4.4 | 4.8 |
| 33 | 2.2 | 0.4 | 0.0 |
| 34 | 3.5 | 2.5 | 2.5 |
| 35 | 2.5 | 0.0 | 0.0 |
| 36 | 2.7 | 4.9 | 4.8 |
| 37 | 0.0 | 0.4 | 0.0 |
| 38 | 4.4 | 4.6 | 4.5 |
| 39 | 4.5 | 4.6 | 4.5 |
| 40 | 2.8 | 0.0 | 2.3 |
| 41 | 2.6 | 2.5 | 2.5 |
| 42 | 2.5 | 2.5 | 2.5 |
| 43 | 2.6 | 2.5 | 2.5 |
| 44 | 2.6 | 2.5 | 2.5 |
| 45 | 0.2 | 0.0 | 0.0 |
| 46 | 4.8 | 4.9 | 0.4 |
| 47 | 2.5 | 2.5 | 5.0 |
| 48 | 2.6 | 2.0 | 2.0 |
| 49 | 0.0 | 0.0 | 0.0 |
| 50 | 0.0 | 0.0 | 0.0 |

## A2-NICAM BLOCK

| PIN / MODE | PLAY | STOP | REC |
|---|---|---|---|
| IC701 | MSP4317D | | |
| 1 | 5.1 | 5.1 | 5.1 |
| 2 | 1.5 | 1.5 | 1.5 |
| 3 | 1.5 | 0.0 | 1.5 |
| 4 | 0.0 | 0.0 | 0.0 |
| 5 | 2.4 | 2.4 | 2.4 |
| 6 | 2.3 | 2.3 | 2.2 |
| 7 | 1.5 | 1.5 | 0.8 |
| 8 | 0.0 | 0.0 | 0.0 |
| 9 | 0.0 | 0.0 | 0.0 |
| 10 | 0.0 | 0.0 | 0.0 |
| 11 | 5.1 | 5.1 | 5.1 |
| 12 | 4.7 | 4.8 | 4.5 |
| 13 | 4.7 | 4.6 | 4.5 |
| 14 | 2.5 | 2.5 | 2.5 |
| 15 | 2.5 | 2.5 | 2.5 |
| 16 | 0.0 | 5.0 | 5.0 |
| 17 | 0.8 | 3.2 | 0.2 |
| 18 | 1.6 | 3.2 | 0.3 |
| 19 | 5.1 | 5.1 | 5.1 |
| 20 | 0.0 | 0.0 | 0.0 |
| 21 | 1.0 | 3.1 | 0.2 |
| 22 | 5.1 | 5.1 | 5.1 |
| 23 | 0.0 | 0.0 | 0.0 |
| 24 | 0.0 | 0.0 | 0.0 |
| 25 | 0.0 | 0.0 | 0.0 |
| 26 | 0.1 | 0.1 | 0.1 |
| 27 | 0.1 | 0.1 | 0.1 |
| 28 | 0.1 | 0.1 | 0.1 |
| 29 | 0.0 | 0.0 | 0.0 |
| 30 | 3.8 | 3.8 | 0.4 |
| 31 | 3.8 | 3.8 | 0.0 |
| 32 | 0.0 | 0.0 | 0.0 |
| 33 | 8.7 | 8.8 | 8.8 |
| 34 | 7.8 | 7.8 | 7.8 |
| 35 | 0.0 | 0.0 | 0.0 |
| 36 | 3.8 | 3.8 | 3.8 |
| 37 | 0.1 | 0.0 | 0.0 |
| 38 | 0.0 | 0.4 | 0.0 |
| 39 | 0.0 | 0.0 | 0.0 |
| 40 | 3.8 | 3.8 | 3.8 |
| 41 | 3.8 | 3.8 | 3.8 |
| 42 | 2.6 | 2.6 | 2.6 |
| 43 | 3.8 | 3.8 | 3.8 |
| 44 | 0.0 | 0.0 | 0.0 |

## OSD BLOCK

| PIN / MODE | PLAY | STOP | REC |
|---|---|---|---|
| IC6P01 | LC747XX | | |
| 1 | 0.0 | 0.0 | 0.0 |
| 2 | 2.7 | 2.7 | 2.7 |
| 3 | 5.1 | 5.1 | 5.1 |
| 4 | 5.1 | 5.1 | 5.1 |
| 5 | 4.6 | 4.7 | 4.5 |
| 6 | 2.5 | 2.5 | 2.5 |
| 7 | 2.6 | 2.6 | 2.8 |
| 8 | 5.1 | 0.0 | 0.0 |
| 9 | 4.1 | 4.4 | 0.0 |
| 10 | 5.1 | 5.1 | 5.1 |
| 11 | 5.2 | 5.2 | 5.1 |
| 12 | 5.1 | 5.1 | 5.1 |
| 13 | 2.2 | 2.3 | 2.3 |
| 14 | 2.2 | 2.3 | 2.3 |
| 15 | 0.0 | 0.0 | 0.0 |
| 16 | 0.9 | 1.0 | 1.0 |
| 17 | 0.0 | 0.0 | 0.0 |
| 18 | 5.1 | 5.1 | 5.1 |
| 19(13) | 1.9 | 1.7 | 1.7 |
| 20(14) | 0.0 | 0.0 | 0.0 |
| 21(15) | 1.9 | 1.8 | 1.8 |
| 22(16) | 0.6 | 1.0 | 1.1 |
| 23(17) | 5.1 | 5.1 | 5.1 |
| 24(18) | 3.0 | 3.1 | 3.1 |
| 25(19) | 2.5 | 2.5 | 2.5 |
| 26(20) | 4.6 | 5.0 | 5.0 |
| 27(21) | 4.6 | 4.6 | 4.7 |
| 28(22) | 3.7 | 3.7 | 3.7 |
| 29(23) | 5.1 | 5.1 | 5.1 |
| 30(24) | 5.1 | 5.1 | 5.1 |

VPS/PDC only

*(OSD PIN No)

*MEMO*

# 5. ALIGNMENT AND ADJUSTMENT

## 5-1 REFERENCE

1) X-Point (Tracking center) adjustment, “Head switching adjustment” and “NVRAM option setting” can be adjusted with remote control.
2) When replacing the Micom (IC601) and NVRAM (IC605 ; EEPROM) be sure to adjust the “Head switching adjustment” and “NVRAM option setting”.
3) When replacing the cylinder ass'y, be sure to adjust the “X-Point” and “Head switching adjustment”.
4) How to adjustment.
   - Press the “TEST” button on Main PCB/Function PCB to set the adjustment mode.
   - If the corresponding adjustment button is pressed, the adjustment is performed automatically.
   - If the adjustment is completed, be sure to turn the power off.

### 5-1-1 Location of adjustment button of remote control

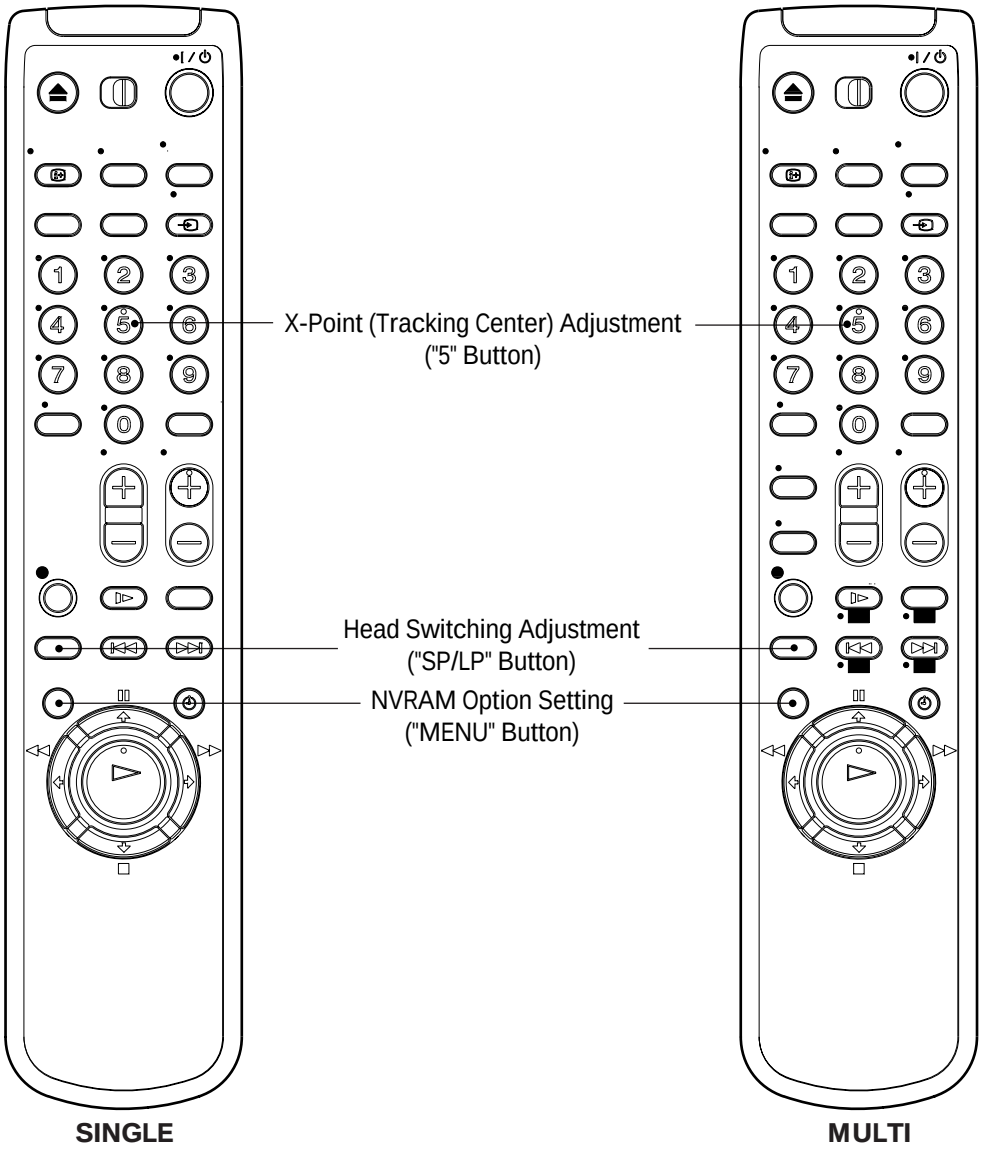



Fig. 5-1

## 5-1-2 Test point location for adjustment mode setting (EZ121/EZ424)

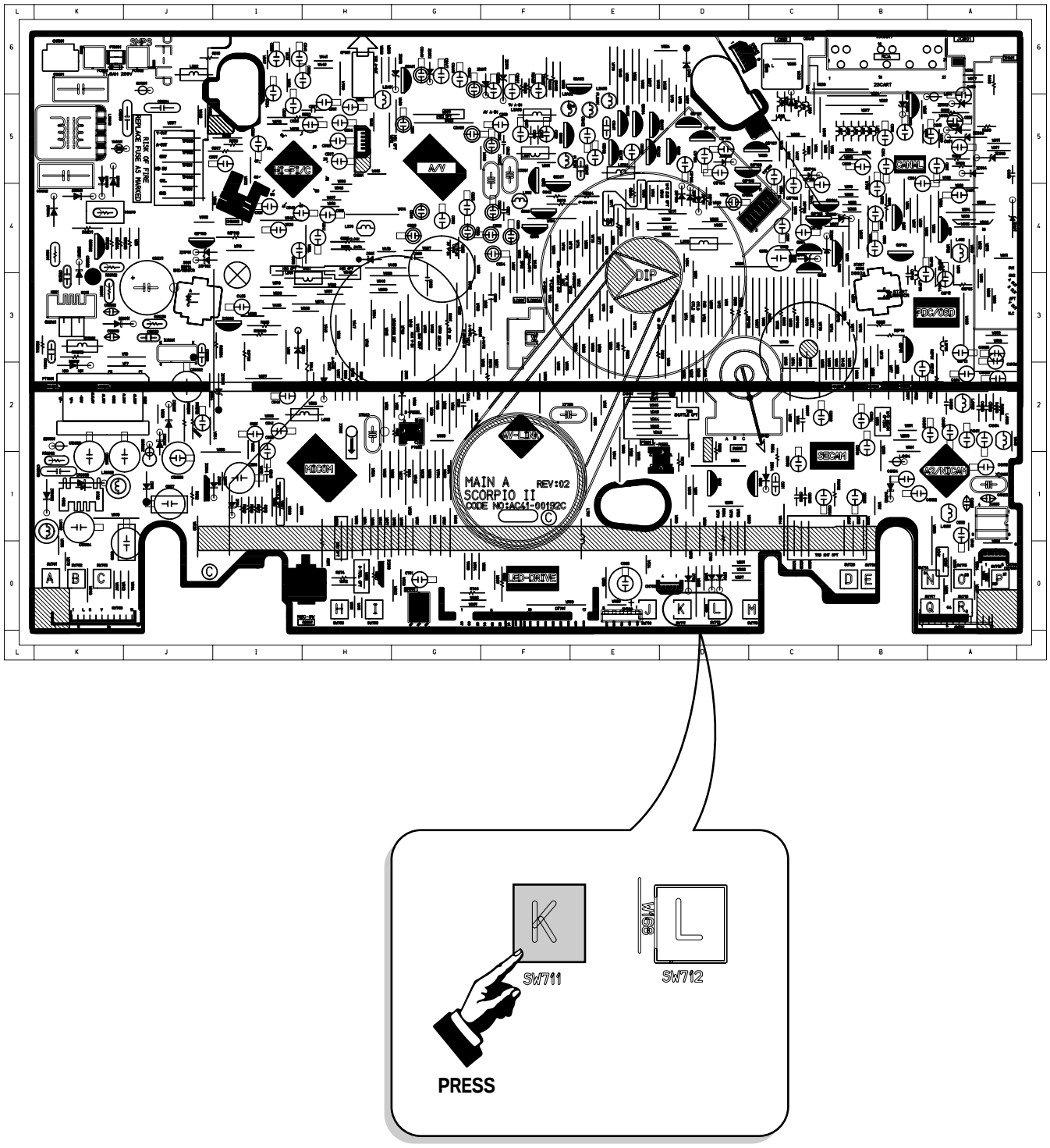



Fig. 5-2 Main PCB (Top View)

## 5-1-3 Test point location for adjustment mode setting (ED225/ED323)

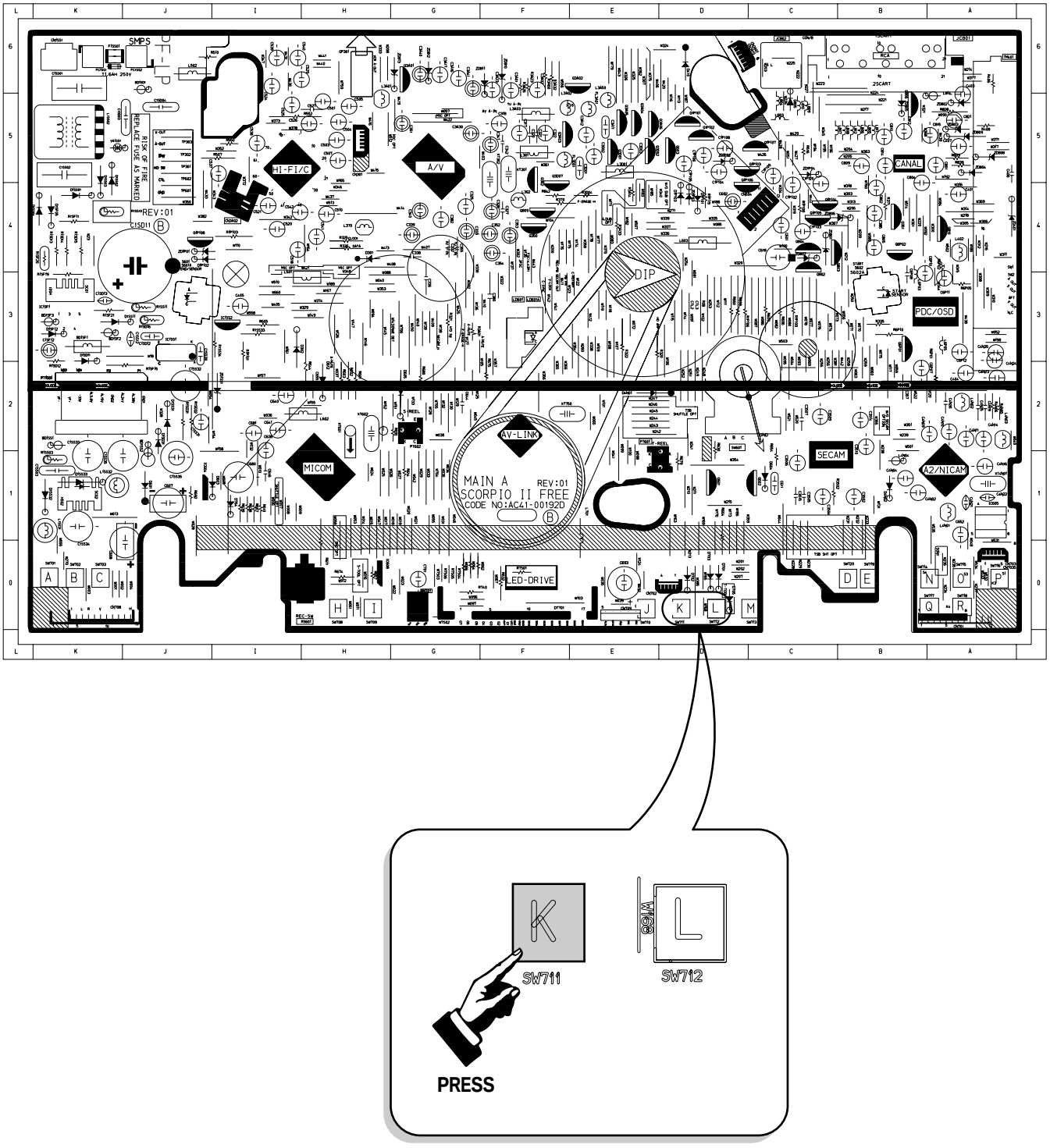



Fig. 5-3 Main PCB (Top View)

## 5-1-4 SW7T21 (TEST) location for adjustment mode setting (ED825/ED828/ED925/ED929/EZ725/EZ727)

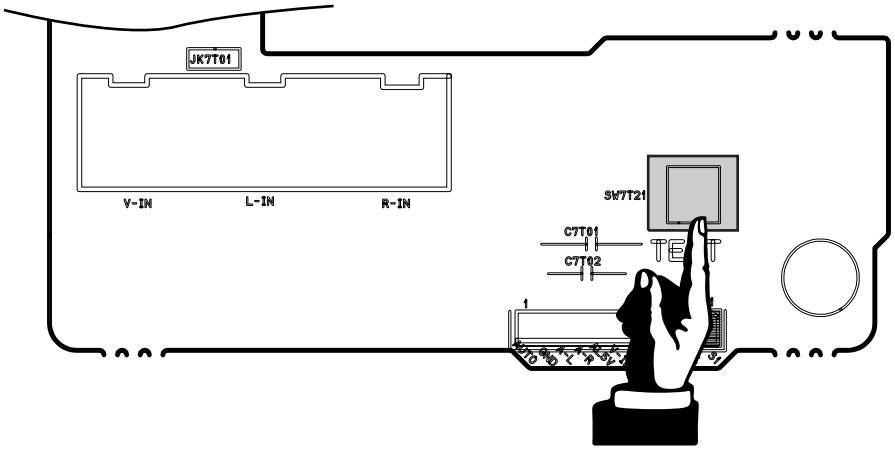



Fig. 5-4 Function PCB (Top View)

## 5-2 MECHANICAL ADJUSTMENT

Note : Refer to the Mechanical Manual for the adjustment and confirmation of ass'y deck.

### 5-2-1 The number and position of test point

| | |
|---|---|
| **Test point :** | TP602 (H'D S/W -Trigger) |
| | TP301 (Envelope) |
| | TP302 (Audio output) |

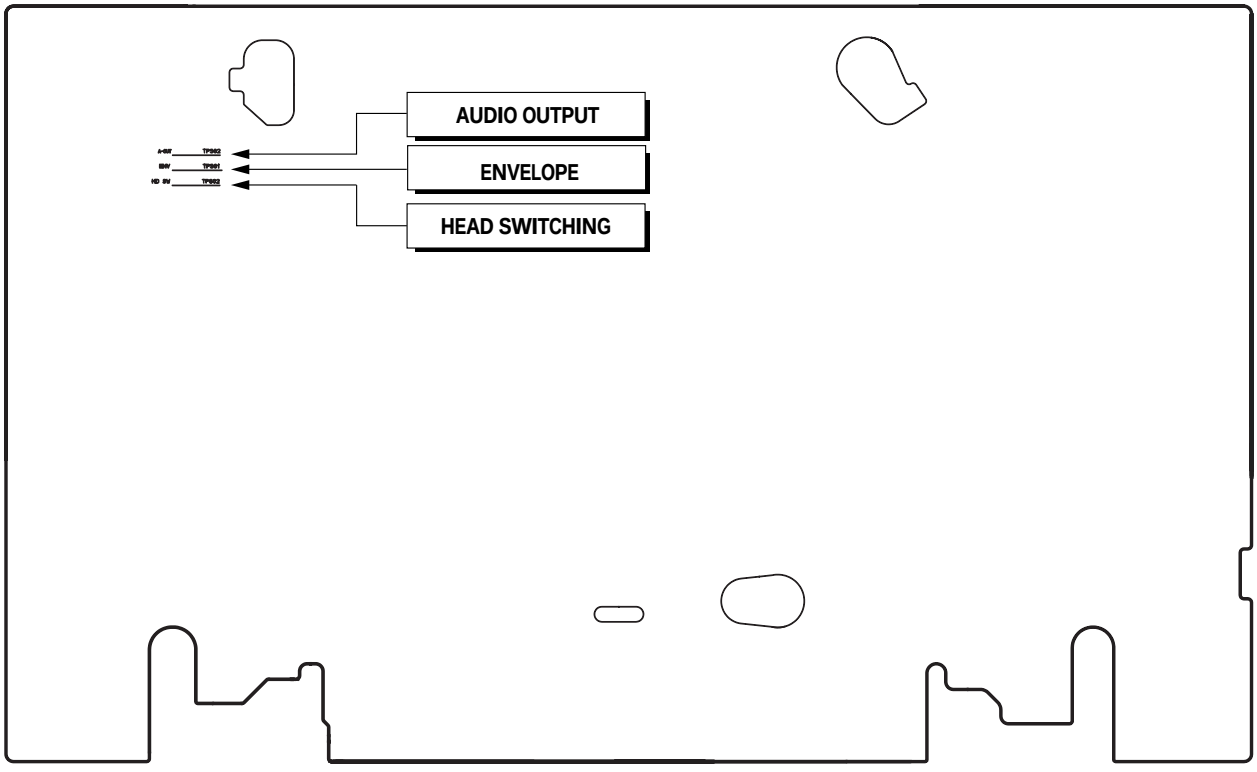



Fig. 5-5 Location of Test point (Main PCB-Top View)

### 5-2-2 ACE Head Position (X-Point) Adjustment

**(See the 5-2-1(d) ACE Head Position (X-Point) Adjustment on page 5-2 of the Mechanical Manual)**

1) Playback the alignment tape (Color bar).
2) Press the "TEST" button on Main PCB/Function PCB to set the adjustment mode.
   (See Fig. 5-2, 5-3 and 5-4)
3) Press the "5" button of remote control then adjustment is operated automatically. (See Fig. 5-1)
4) Connect the CH-1 probe to TP301 (Envelope) the CH-2 probe to TP602 (H'D switching pulse) and then trigger to CH-1.
5) Insert the (-) driver into the X-Point adjustment hole and adjust it so that envelope waveform is maximum.
6) Turn the Power off.

## 5-3 HEAD SWITCHING POINT ADJUSTMENT

1) Playback the alignment tape.
2) Press the “TEST” button on Main PCB/Function PCB to set the adjustment mode. (See Fig. 5-2, 5-3 and 5-4)
3) Press the “SP/LP” button of remote control then adjustment is operated automatically. (See Fig. 5-1)
4) Turn the Power off.

## 5-4 NVRAM OPTION SETTING

1) NVRAM Option is adjusted at production line basically.
2) In case Micom (IC601) and NVRAM (IC605 ; EEPROM) is replaced, be sure to set the corresponding option number of the reqaired model. (If the option is not set, the unit is not operated.)

1) Press the “TEST” button on Main PCB/Function PCB to set the adjustment mode. (See Fig. 5-2, 5-3 and 5-4)
2) Press the “MENU” button on the remote control about 5 seconds then option setting display is appeared. (See Fig. 5-6 and 5-7)
3) Select the option number (See Table 5-1) of corresponding model with “FF/REW/STOP/PAUSE” button on the remote control.
4) If selecting the option number is completed, press the “OK (PLAY)” button of remote control. (If “OK (PLAY)” button is pressed, the selected number is changes reversed color. ; See Fig. 5-5)
5) Press the “MENU” button of remote control again to store the option number. (“PLEASE WAIT” is displayed for a second as shown Fig. 5-7 and this setting is completed.)
6) Turn the Power off.

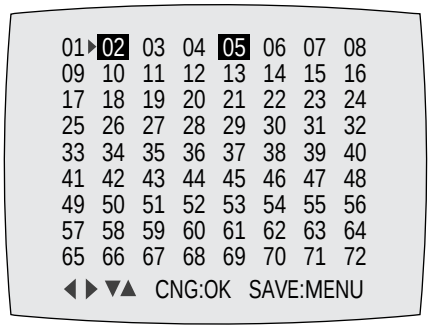



Fig. 5-6

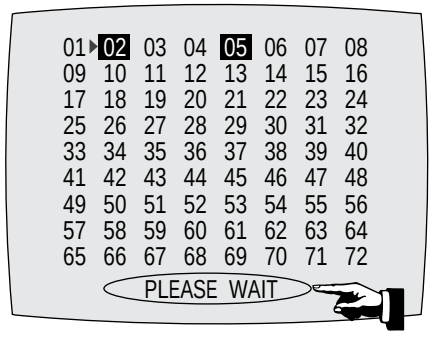



Fig. 5-7

<Table 5-1>

| MODELS | OPTION NUMBER |
|---|---|
| SLV-EZ121AZ | 10, 12, 25, 26, 27, 33, 35, 36, 39, 42, 45, 47, 50, 53, 60, 61, 63, 64, 69, 72 |
| SLV-ED225PS | 10, 12, 20, 22, 25, 27, 35, 39, 42, 45, 47, 50, 53, 60, 61, 63, 64, 69, 72 |
| SLV-ED323SG | 10, 12, 20, 22, 25, 27, 35, 39, 42, 45, 47, 50, 60, 61, 63, 64, 69, 72 |
| SLV-ED323ME | 10, 12, 20, 22, 25, 27, 35, 39, 42, 45, 47, 50, 60, 61, 63, 64, 69, 72 |
| SLV-EZ424AZ | 1, 9, 10, 12, 25, 26, 27, 33, 35, 36, 39, 42, 45, 47, 50, 53, 60, 61, 63, 64, 67, 69, 72 |
| SLV-ED825PS | 6, 9, 10, 12, 20, 22, 25, 27, 35, 39, 42, 45, 47, 49, 51, 53, 60, 61, 63, 64, 69, 72 |
| SLV-ED828SG | 6, 9, 10, 12, 15, 20, 22, 25, 27, 35, 39, 42, 45, 47, 49, 51, 60, 61, 63, 64, 69, 72 |
| SLV-ED828ME | 6, 9, 10, 12, 15, 20, 22, 25, 27, 35, 39, 42, 45, 47, 49, 51, 53, 60, 61, 63, 64, 69, 72 |
| SLV-EZ725AZ | 6, 7, 8, 9, 10, 12, 15, 25, 26, 27, 33, 35, 36, 39, 42, 45, 47, 49, 51, 53, 60, 61, 63, 64, 69, 72 |
| SLV-EZ727AZ | 1, 6, 7, 8, 9, 10, 12, 15, 22, 25, 26, 27, 33, 35, 36, 39, 42, 45, 47, 49, 51, 53, 60, 61, 63, 64, 67, 69, 72 |
| SLV-ED925PS | 6, 7, 8, 9, 10, 12, 15, 20, 22, 25, 27, 35, 39, 42, 45, 47, 49, 51, 53, 60, 61, 63, 64, 69, 72 |
| SLV-ED929MI | 1, 6, 7, 8, 9, 10, 12, 15, 20, 22, 25, 28, 35, 36, 39, 42, 45, 47, 49, 51, 53, 60, 61, 63, 64, 69, 72 |

# 6. REPAIR PARTS LIST

Page

6-1 Exploded Views - - -

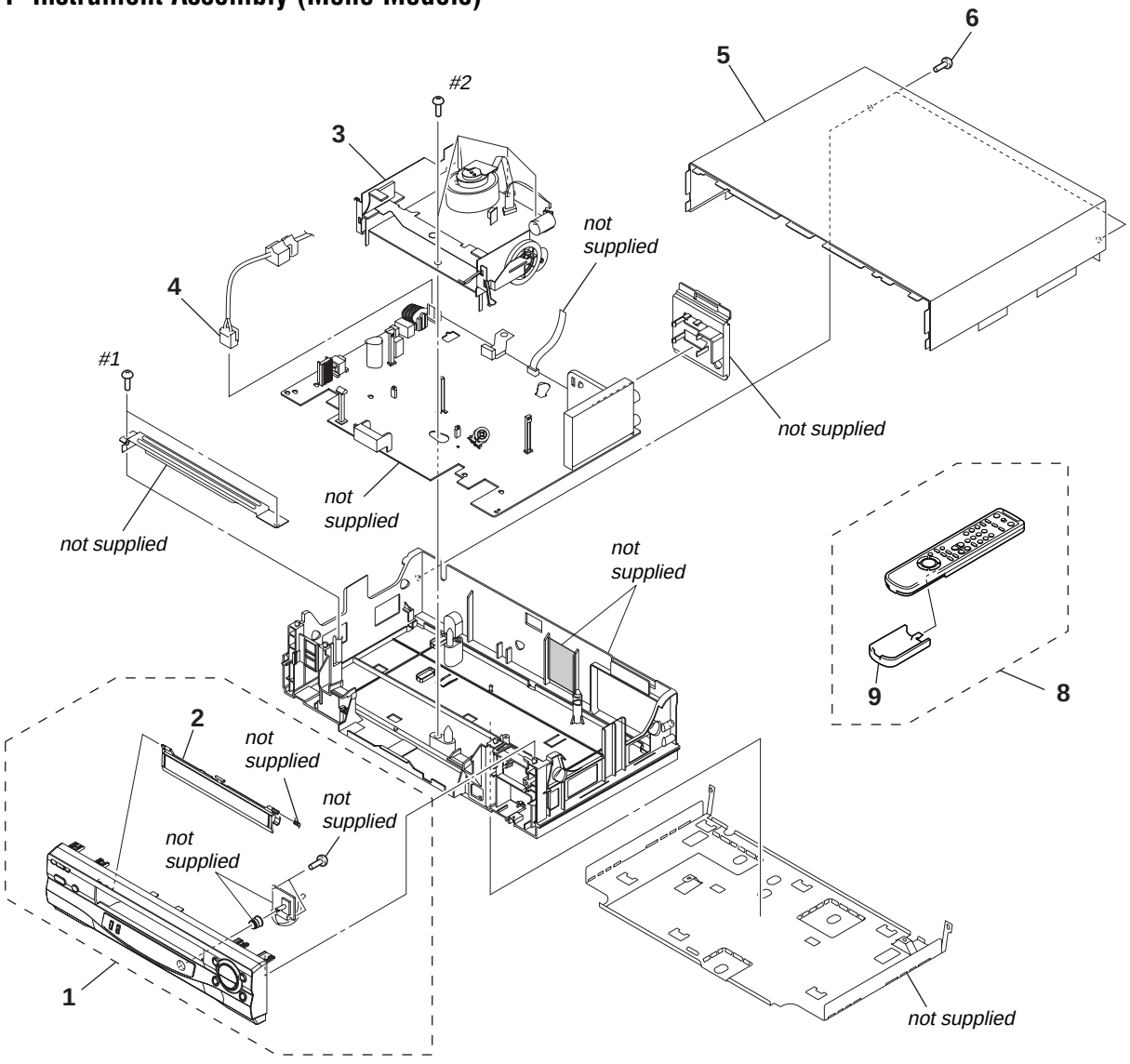
# 6-1 EXPLODED VIEWS

NOTE:
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Abbreviation
  AUS : Australia model
  HK : Hong Kong model
  ME : Middle East model

The components identified by mark ⚠or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- Hi-Fi model: ED825/ED828/ED925/ED929/EZ725/EZ727
  Mono model: ED225/ED323/EZ121/EZ424

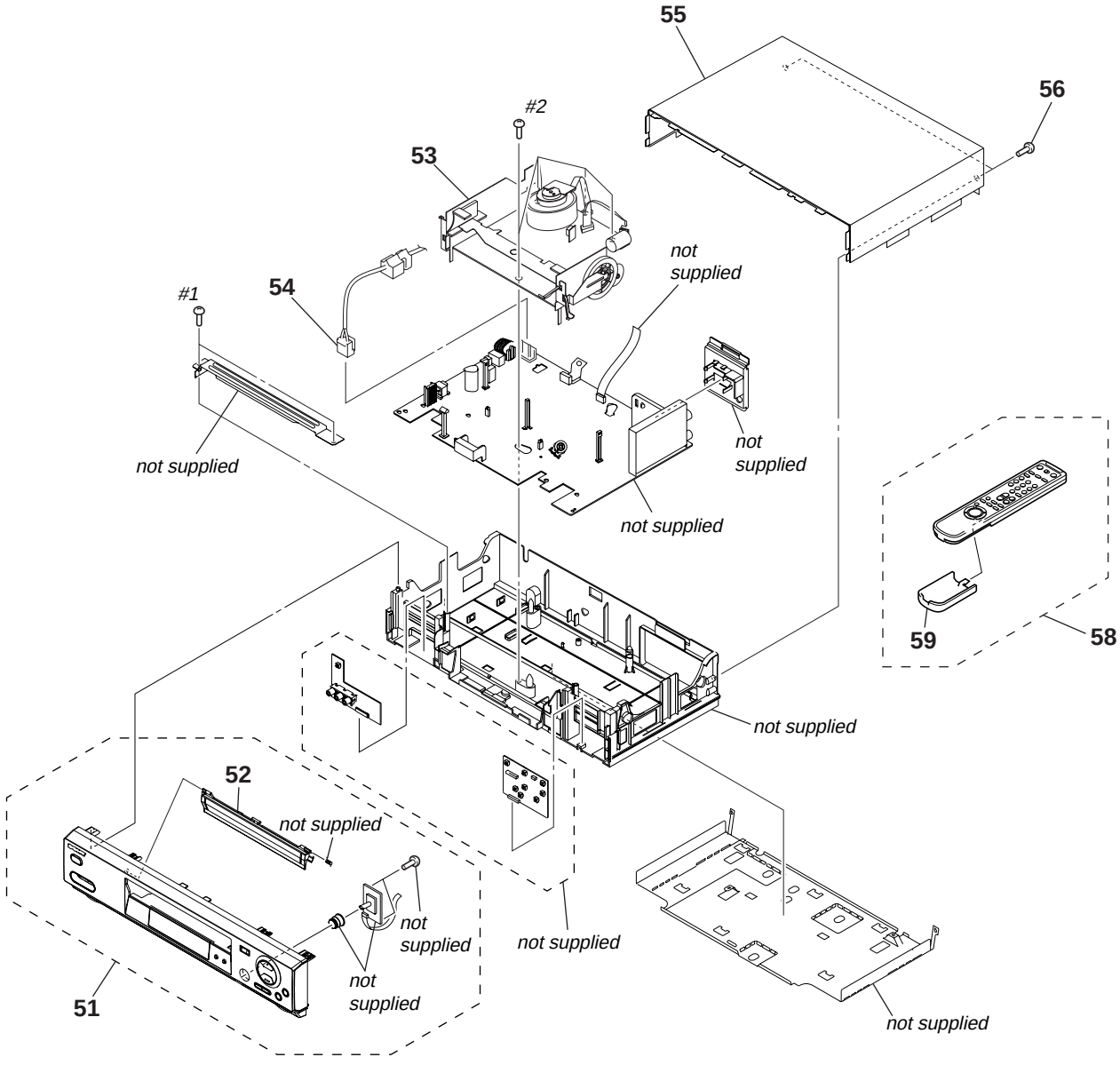
## 6-1-1 Instrument Assembly (Mono Models)




| Ref. No. | Part No. | Description | Remarks |
|---|---|---|---|
| 1 | 3-076-021-01 | PANEL FRONT (EZ121) | |
| 1 | 3-076-022-01 | PANEL FRONT (ED225) | |
| 1 | 3-076-023-01 | PANEL FRONT (ED323) | |
| 1 | 3-076-024-01 | PANEL FRONT (EZ424) | |
| 2 | 3-076-017-01 | DOOR-CASSETTE | |
| 3 | 3-076-035-01 | ASSY-DECK | |
| ⚠4 | 1-823-023-11 | POWER CORD (ED225/ED323) | |
| ⚠4 | 1-824-231-11 | POWER CORD (EZ121/EZ424) | |

| Ref. No. | Part No. | Description | Remarks |
|---|---|---|---|
| 5 | 3-075-020-01 | CASE UPPER | |
| 6 | 7-685-646-11 | SCREW-TAPTITE | |
| 8 | 1-477-367-11 | REMOTE COMMANDER (RMT-V408) | (EXCEPT EZ424) |
| 8 | 1-477-368-11 | REMOTE COMMANDER (RMT-V408A) (EZ424) | |
| 9 | 3-075-088-01 | DOOR BATTERY REMOCON | (for RMT-V408/V408A) |

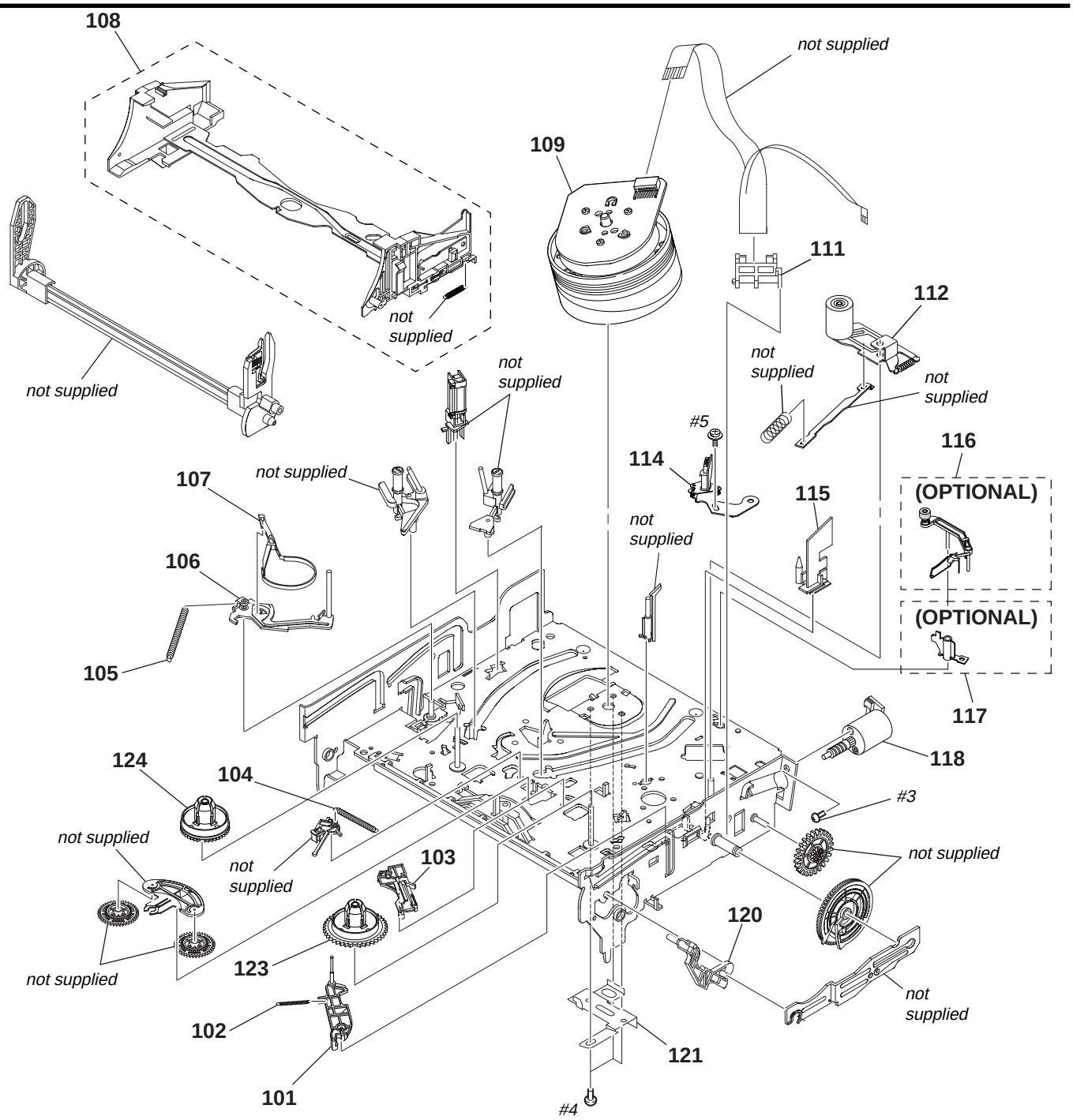
## 6-1-2 Instrument Assembly (Hi-Fi Models)




| Ref. No. | Part No. | Description | Remarks |
|---|---|---|---|
| 51 | 3-076-025-01 | PANEL FRONT (ED825) | |
| 51 | 3-076-026-01 | PANEL FRONT (ED828) | |
| 51 | 3-076-027-01 | PANEL FRONT (EZ725) | |
| 51 | 3-076-028-01 | PANEL FRONT (EZ727) | |
| 51 | 3-076-029-01 | PANEL FRONT (ED925) | |
| 51 | 3-076-030-01 | PANEL FRONT (ED929) | |
| 52 | 3-076-018-01 | DOOR-CASSETTE | |
| 53 | 3-709-670-01 | ASSY-DECK | |
| ⚠54 | 1-823-023-11 | POWER CORD (ED825/ED828/ED925/ED929) | |

| Ref. No. | Part No. | Description | Remarks |
|---|---|---|---|
| ⚠54 | 1-824-231-11 | POWER CORD (EZ725/EZ727) | |
| 55 | 3-075-019-01 | CASE UPPER | |
| 56 | 7-685-646-11 | SCREW-TAPTITE | |
| 58 | 1-477-367-11 | REMOTE COMMANDER (RMT-V408) (ED825/ED828/ED925/EZ725) | |
| 58 | 1-477-368-11 | REMOTE COMMANDER (RMT-V408A) (ED929) | |
| 58 | 1-477-369-11 | REMOTE COMMANDER (RMT-V409) (EZ727) | |
| 59 | 3-075-088-01 | DOOR BATTERY REMOCON (for RMT-V408/V408A/V409) | |

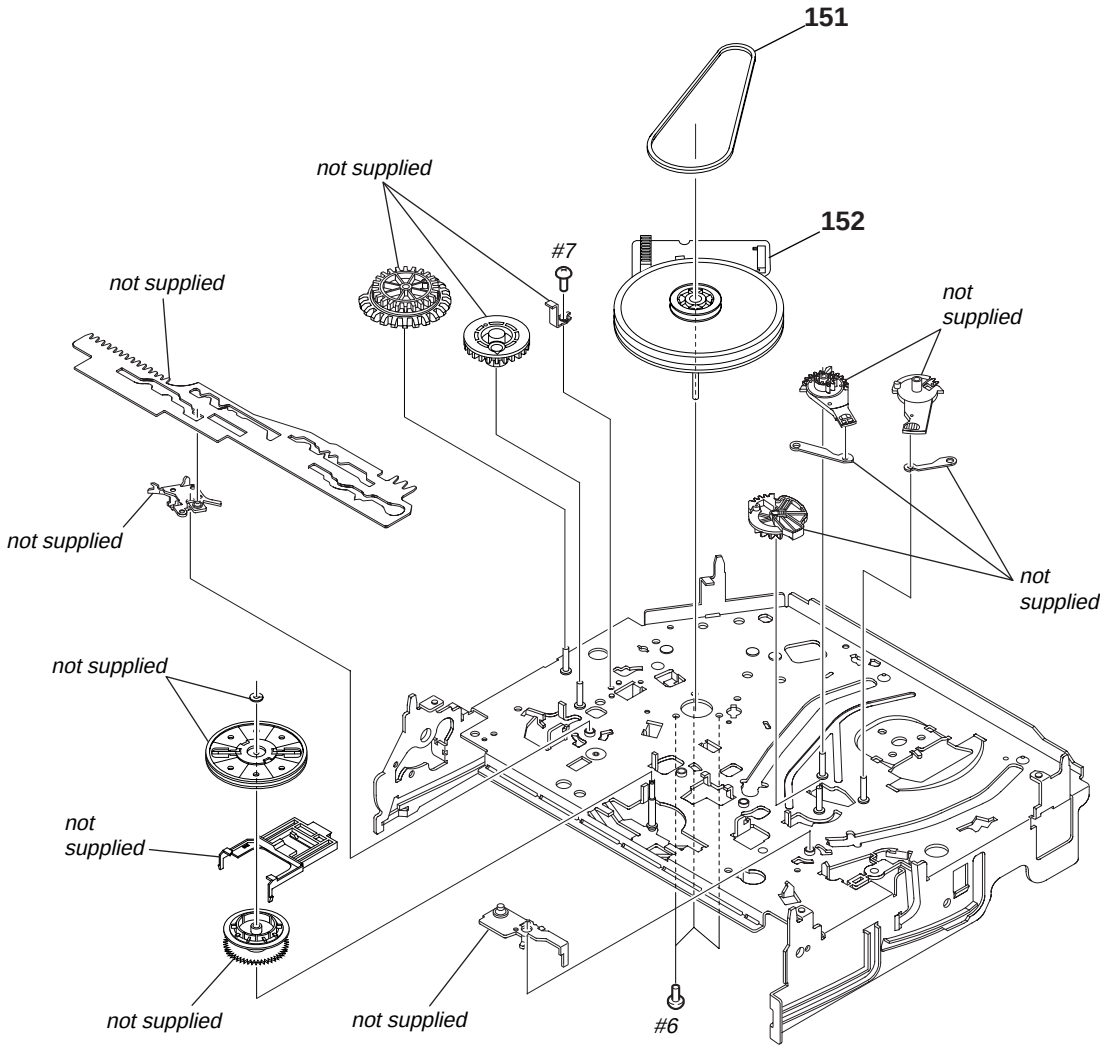
## 6-1-3 Mechanical Parts (Top Side)




| Ref. No. | Part No. | Description | Remarks |
|---|---|---|---|
| 101 | 3-067-779-01 | LEVER-GUIDE ASSY | |
| 102 | 3-067-780-01 | SPRING-GUIDE | |
| 103 | 3-067-785-01 | LEVER-T.BREAK ASSY | |
| 104 | 3-067-786-01 | SPRING-BREAK | |
| 105 | 3-067-782-01 | SPRING-TENSION LEVER | |
| 106 | 3-067-781-01 | LEVER-TENSION ASSY | |
| 107 | 3-067-783-01 | BAND-BRAKE ASSY | |
| 108 | 3-067-788-01 | HOLDER-FL CASS.ASSY | |
| 109 | 1-796-440-11 | DRUM ASSY (ED323) | |
| 109 | 1-796-441-11 | DRUM ASSY (ED828) | |
| 109 | 1-804-708-11 | DRUM ASSY (ED225/EZ121) | |
| 109 | 1-804-709-11 | DRUM ASSY (EZ424) | |

| Ref. No. | Part No. | Description | Remarks |
|---|---|---|---|
| 109 | 1-804-710-11 | DRUM ASSY (ED825/ED925/ED929/EZ725/EZ727) | |
| 111 | 1-796-433-11 | DAMPER-CAPSTAN | |
| 112 | 3-067-784-01 | LEVER-UNIT PINCH ASSY | |
| 114 | 3-709-671-01 | ASSY-HEAD ACE | |
| 115 | 3-067-789-01 | GUIDE-CASS. DOOR | |
| 116 | 3-075-021-01 | LEVER-HEAD CLEANER ASSY | |
| 117 | 3-075-022-01 | SLEEVE-HEAD CLEANER | |
| 118 | 1-796-434-11 | MOTOR-LOADING ASSY | |
| 120 | 3-067-787-01 | LEVER-FL DOOR | |
| 121 | 3-067-796-01 | PLATE-GROUND DECK | |
| 123 | 3-075-047-01 | REEL-DISK T | |
| 124 | 3-075-046-01 | REEL-DISK S | |

## 6-1-4 Mechanical Parts (Bottom Side)




| Ref. No. | Part No. | Description | Remarks |
|---|---|---|---|
| 151 | 3-067-790-01 | BELT-PULLEY | |

| Ref. No. | Part No. | Description | Remarks |
|---|---|---|---|
| 152 | 1-796-432-11 | MOTOR-CAPSTAN | |

**FUNCTION** **MAIN**

# 6-2 ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- Not all of the parts are listed.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... ,
  uPB... , µPB... , uPC... , µPC... ,
  uPD..., µPD...
- CAPACITORS:
  uF: µF
- COILS
  uH: µH
- Abbreviation
  AUS : Australia model
  HK : Hong Kong model
  ME : Middle East model
- Hi-Fi model: ED825/ED828/ED925/ED929/EZ725/EZ727
  Mono model: ED225/ED323/EZ121/EZ424

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

| Ref. No. | Part No. | Description | | | Remarks |
|---|---|---|---|---|---|
| | | FUNCTION BOARD, COMPLETE | | | |
| | | ********** | | | |
| | | < CAPACITOR > | | | |
| C7T01 | 1-161-323-11 | CERAMIC,MLC-AXIAL | 1nF | 10% | 50V |
| | | | | | (ED828/ED925/ED929/EZ725/EZ727) |
| C7T02 | 1-161-323-11 | CERAMIC,MLC-AXIAL | 1nF | 10% | 50V |
| | | | | | (ED828/ED925/ED929/EZ725/EZ727) |
| | | < DIAL TIMER > | | | |
| DL701 | 1-786-352-11 | DIAL-TIMER (EASY TIMER) (EXCEPT EZ121) | | | |
| | | MAIN BOARD, COMPLETE | | | |
| | | ********** | | | |
| | | < COIL > | | | |
| BD1SD1 | 1-400-085-11 | INDUCTOR | | | |
| BD1SF1 | 1-400-086-11 | CORE-FERRITE BEAD (E, HK, ME) | | | |
| BD1SF2 | 1-400-085-11 | INDUCTOR (E, HK, ME) | | | |
| BD1SF3 | 1-400-085-11 | INDUCTOR (E, HK, ME) | | | |
| BD1SR1 | 1-400-086-11 | CORE-FERRITE BEAD (AUS) | | | |
| BD1SS1 | 1-400-085-11 | INDUCTOR | | | |
| BD1SS2 | 1-400-085-11 | INDUCTOR | | | |
| | | < CAPACITOR > | | | |
| C1P102 | 1-126-437-11 | ELECT | 47uF | 20% | 25V |
| C1P103 | 1-126-458-61 | ELECT | 1uF | 20% | 50V |
| C1P104 | 1-126-794-11 | ELECT | 4.7uF | 20% | 50V |
| C1P105 | 1-126-437-11 | ELECT | 47uF | 20% | 25V |
| C1P106 | 1-126-437-11 | ELECT | 47uF | 20% | 25V |
| C1P108 | 1-126-794-11 | ELECT | 4.7uF | 20% | 50V |
| | | | | | (Hi-Fi model) |
| C1P109 | 1-126-458-61 | ELECT | 1uF | 20% | 50V |
| | | | | | (Hi-Fi model) |
| C1P120 | 1-126-437-11 | ELECT | 47uF | 20% | 25V |
| C1SD03 | 1-165-557-11 | CERAMIC,DISC | 2.2nF | 20% | 400V |
| C1SD04 | 1-165-557-11 | CERAMIC,DISC | 2.2nF | 20% | 400V |
| C1SD11 | 1-100-048-11 | ELECT | 82uF | 20% | 400V |
| | | | | | (E, HK, ME) |
| C1SD11 | 1-165-577-11 | ELECT | 47uF | 20% | 400V |
| | | | | | (AUS) |
| C1SD12 | 1-165-574-11 | FILM,MPEF | 10nF | 10% | 630V |
| C1SD13 | 1-165-991-11 | CERAMIC,DISC | 0.22nF | 5% | 50V |
| | | | | | (E, HK, ME) |
| C1SD13 | 1-165-567-11 | FILM,PEF | 1.2nF | 10% | 50V |
| | | | | | (AUS) |
| C1SF12 | 1-126-966-11 | ELECT | 33uF | 20% | 50V |
| | | | | | (E, HK, ME) |
| C1SR12 | 1-124-285-11 | ELECT | 22uF | 20% | 16V |
| | | | | | (AUS) |
| C1SR14 | 1-165-571-11 | FILM,PEF | 4.7nF | 5% | 50V |
| | | | | | (AUS) |
| ⚠C1SS01 | 1-165-573-11 | FILM,MPEF | 100nF | 20% | 275V |
| ⚠C1SS02 | 1-165-573-11 | FILM,MPEF | 100nF | 20% | 275V |
| C1SS03 | 1-165-557-11 | CERAMIC,DISC | 2.2nF | 20% | 400V |
| | | | | | (AUS:EZ121/EZ424, E, HK, ME) |
| C1SS12 | 1-165-990-11 | CERAMIC,DISC | 0.1nF | 10% | 1kV |
| C1SS13 | 1-165-990-11 | CERAMIC,DISC | 0.1nF | 10% | 1kV (AUS) |
| C1SS31 | 1-218-582-11 | ELECT | 10uF | 20% | 100V |
| C1SS32 | 1-126-970-11 | ELECT | 330uF | 20% | 50V |
| C1SS33 | 1-126-940-11 | ELECT | 330uF | 20% | 25V |
| C1SS34 | 1-126-940-11 | ELECT | 330uF | 20% | 25V |
| C1SS35 | 1-126-926-11 | ELECT | 1000uF | 20% | 10V |
| C1SS36 | 1-126-926-11 | ELECT | 1000uF | 20% | 10V |
| C1SS39 | 1-136-497-11 | FILM,PEF | 100nF | 5% | 50V |
| C317 | 1-126-458-61 | ELECT | 1uF | 20% | 50V |
| C318 | 1-126-458-61 | ELECT | 1uF | 20% | 50V |
| C321 | 1-161-494-11 | CERAMIC,MLC-AXIAL | 22nF | +80-20% | 25V |
| C322 | 1-126-458-61 | ELECT | 1uF | 20% | 50V |
| C325 | 1-126-437-11 | ELECT | 47uF | 20% | 25V |
| C326 | 1-126-458-61 | ELECT | 1uF | 20% | 50V |
| C329 | 1-115-339-11 | CERAMIC,CHIP | 100nF | 10% | 50V |
| C331 | 1-115-339-11 | CERAMIC,CHIP | 100nF | +80-20% | 50V |
| | | | | | (E, HK, ME) |
| C331 | 1-216-295-11 | RES-CHIP | 0 | 5% | 1/10W |
| | | | | | (AUS) |
| C333 | 1-126-109-11 | ELECT | 10uF | 20% | 16V |
| C338 | 1-161-494-11 | CERAMIC,MLC-AXIAL | 22nF | +80-20% | 25V |
| C339 | 1-126-109-11 | ELECT | 10uF | 20% | 16V |
| C341 | 1-126-437-11 | ELECT | 47uF | 20% | 25V |
| C343 | 1-165-319-11 | CERAMIC,CHIP | 1000nF | +80-20% | 16V |
| C347 | 1-165-319-11 | CERAMIC,CHIP | 1000nF | +80-20% | 16V |
| C348 | 1-115-339-11 | CERAMIC,CHIP | 100nF | 10% | 50V |

| Ref. No. | Part No. | Description | | | | Remarks |
|---|---|---|---|---|---|---|
| C349 | 1-165-319-11 | CERAMIC,CHIP | 1000nF | +80-20% | 16V | |
| C350 | 1-115-339-11 | CERAMIC,CHIP | 100nF | 10% | 50V | |
| C351 | 1-126-437-11 | ELECT | 47uF | 20% | 25V | |
| C352 | 1-126-458-61 | ELECT | 1uF | 20% | 50V | |
| C353 | 1-126-458-61 | ELECT | 1uF | 20% | 50V | |
| C354 | 1-126-437-11 | ELECT | 47uF | 20% | 25V | |
| C356 | 1-163-251-11 | CERAMIC,CHIP | 0.1nF | 5% | 50V | (ED828/ED925/ED929/EZ725/EZ727) |
| C372 | 1-115-339-11 | CERAMIC,CHIP | 100nF | 10% | 50V | |
| C380 | 1-161-494-11 | CERAMIC,MLC-AXIAL | 22nF | +80-20% | 25V | |
| C384 | 1-115-339-11 | CERAMIC,CHIP | 100nF | 10% | 50V | |
| C3A02 | 1-126-435-71 | ELECT | 22uF | 20% | 16V | |
| C3A12 | 1-126-437-11 | ELECT | 47uF | 20% | 25V | |
| C3A14 | 1-163-267-11 | CERAMIC,CHIP | 0.47nF | 5% | 50V | |
| C3A17 | 1-126-109-11 | ELECT | 10uF | 20% | 16V | |
| C3A22 | 1-115-339-11 | CERAMIC,CHIP | 100nF | 10% | 50V | (Mono model) |
| C3A24 | 1-115-339-11 | CERAMIC,CHIP | 100nF | 10% | 50V | |
| C3A29 | 1-115-339-11 | CERAMIC,CHIP | 100nF | 10% | 50V | |
| C3A30 | 1-126-437-11 | ELECT | 47uF | 20% | 25V | |
| C3A40 | 1-126-109-11 | ELECT | 10uF | 20% | 16V | |
| C3A41 | 1-126-458-61 | ELECT | 1uF | 20% | 50V | |
| C401 | 1-126-925-11 | ELECT | 470uF | 20% | 10V | |
| C402 | 1-163-033-11 | CERAMIC,CHIP | 22nF | 10% | 50V | |
| C4N01 | 1-163-011-11 | CERAMIC,CHIP | 1.5nF | 10% | 50V | (ED925/ED929/EZ725/EZ727) |
| C4N02 | 1-126-109-11 | ELECT | 10uF | 20% | 16V | (ED925/ED929/EZ725/EZ727) |
| C4N04 | 1-126-460-61 | ELECT | 2.2uF | 20% | 50V | (ED925/ED929/EZ725/EZ727) |
| C4N07 | 1-163-267-11 | CERAMIC,CHIP | 0.47nF | 5% | 50V | (ED925/ED929/EZ725/EZ727) |
| C4N08 | 1-163-011-11 | CERAMIC,CHIP | 1.5nF | 10% | 50V | (ED925/ED929/EZ725/EZ727) |
| C4N09 | 1-126-109-11 | ELECT | 10uF | 20% | 16V | (ED925/ED929/EZ725/EZ727) |
| C4N10 | 1-126-109-11 | ELECT | 10uF | 20% | 16V | (ED925/ED929/EZ725/EZ727) |
| C4N11 | 1-126-461-61 | ELECT | 3.3uF | 20% | 50V | (ED925/ED929/EZ725/EZ727) |
| C4N12 | 1-115-339-11 | CERAMIC,CHIP | 100nF | 10% | 50V | (ED925/ED929/EZ725/EZ727) |
| C4N13 | 1-115-339-11 | CERAMIC,CHIP | 100nF | 10% | 50V | (ED925/ED929/EZ725/EZ727) |
| C4N14 | 1-126-109-11 | ELECT | 10uF | 20% | 16V | (ED925/ED929/EZ725/EZ727) |
| C4N15 | 1-115-339-11 | CERAMIC,CHIP | 100nF | 10% | 50V | (ED925/ED929/EZ725/EZ727) |
| C4N17 | 1-163-267-11 | CERAMIC,CHIP | 0.47nF | 5% | 50V | (ED925/ED929/EZ725/EZ727) |
| C4N18 | 1-163-267-11 | CERAMIC,CHIP | 0.47nF | 5% | 50V | (ED925/ED929/EZ725/EZ727) |
| C4N23 | 1-126-458-61 | ELECT | 1uF | 20% | 50V | (ED925/ED929/EZ725/EZ727) |
| C4N24 | 1-126-458-61 | ELECT | 1uF | 20% | 50V | (ED925/ED929/EZ725/EZ727) |
| C4N26 | 1-126-458-61 | ELECT | 1uF | 20% | 50V | (ED825/ED828) |

| Ref. No. | Part No. | Description | | | | Remarks |
|---|---|---|---|---|---|---|
| C501 | 1-126-109-11 | ELECT | 10uF | 20% | 16V | (Hi-Fi model) |
| C502 | 1-115-339-11 | CERAMIC,CHIP | 100nF | 10% | 50V | (Hi-Fi model) |
| C503 | 1-126-435-71 | ELECT | 22uF | 20% | 16V | (Hi-Fi model) |
| C504 | 1-126-109-11 | ELECT | 10uF | 20% | 16V | (Hi-Fi model) |
| C505 | 1-126-794-11 | ELECT | 4.7uF | 20% | 50V | (Hi-Fi model) |
| C507 | 1-126-435-71 | ELECT | 22uF | 20% | 16V | (Hi-Fi model) |
| C508 | 1-163-017-11 | CERAMIC,CHIP | 4.7nF | 10% | 50V | (Hi-Fi model) |
| C510 | 1-126-437-11 | ELECT | 47uF | 20% | 25V | (Hi-Fi model) |
| C517 | 1-163-017-11 | CERAMIC,CHIP | 4.7nF | 10% | 50V | (Hi-Fi model) |
| C518 | 1-126-435-71 | ELECT | 22uF | 20% | 16V | (Hi-Fi model) |
| C520 | 1-126-794-11 | ELECT | 4.7uF | 20% | 50V | (Hi-Fi model) |
| C521 | 1-126-109-11 | ELECT | 10uF | 20% | 16V | (Hi-Fi model) |
| C522 | 1-115-339-11 | CERAMIC,CHIP | 100nF | 10% | 50V | (Hi-Fi model) |
| C523 | 1-115-339-11 | CERAMIC,CHIP | 100nF | 10% | 50V | (Hi-Fi model) |
| C524 | 1-126-794-11 | ELECT | 4.7uF | 20% | 50V | (Hi-Fi model) |
| C525 | 1-126-794-11 | ELECT | 4.7uF | 20% | 50V | (Hi-Fi model) |
| C529 | 1-126-794-11 | ELECT | 4.7uF | 20% | 50V | (Hi-Fi model) |
| C530 | 1-115-339-11 | CERAMIC,CHIP | 100nF | 10% | 50V | (Hi-Fi model) |
| C535 | 1-115-339-11 | CERAMIC,CHIP | 100nF | 10% | 50V | (Hi-Fi model) |
| C536 | 1-115-339-11 | CERAMIC,CHIP | 100nF | 10% | 50V | (Hi-Fi model) |
| C537 | 1-126-460-61 | ELECT | 2.2uF | 20% | 50V | (Hi-Fi model) |
| C538 | 1-126-460-61 | ELECT | 2.2uF | 20% | 50V | (Hi-Fi model) |
| C541 | 1-126-458-61 | ELECT | 1uF | 20% | 50V | (Hi-Fi model) |
| C601 | 1-126-437-11 | ELECT | 47uF | 20% | 25V | |
| C602 | 1-163-033-11 | CERAMIC,CHIP | 22nF | 10% | 50V | |
| C609 | 1-163-033-11 | CERAMIC,CHIP | 22nF | 10% | 50V | |
| C618 | 1-126-968-11 | ELECT | 100uF | 20% | 50V | |
| C624 | 1-161-283-51 | CERAMIC,CHIP | 0.022nF | 5% | 50V | |
| C625 | 1-161-283-51 | CERAMIC,CHIP | 0.022nF | 5% | 50V | |
| C626 | 1-161-283-51 | CERAMIC,CHIP | 0.022nF | 5% | 50V | |
| C627 | 1-161-283-51 | CERAMIC,CHIP | 0.022nF | 5% | 50V | |
| C637 | 1-163-267-11 | CERAMIC,CHIP | 0.47nF | 5% | 50V | |
| C639 | 1-163-251-11 | CERAMIC,CHIP | 0.1nF | 5% | 50V | |
| C640 | 1-126-437-11 | ELECT | 47uF | 20% | 25V | |
| C642 | 1-115-339-11 | CERAMIC,CHIP | 100nF | 10% | 50V | |

# MAIN

| Ref. No. | Part No. | Description | | | Remarks |
|---|---|---|---|---|---|
| C651 | 1-163-033-11 | CERAMIC,CHIP | 22nF | 10% | 50V |
| C655 | 1-163-121-11 | CERAMIC,CHIP | 0.15nF | 5% | 50V |
| C679 | 1-163-033-11 | CERAMIC,CHIP | 22nF | 10% | 50V |
| C680 | 1-126-926-11 | ELECT | 1000uF | 20% | 10V |
| C692 | 1-126-437-11 | ELECT | 47uF | 20% | 25V |
| C695 | 1-163-121-11 | CERAMIC,CHIP | 0.15nF | 5% | 50V |
| C697 | 1-163-033-11 | CERAMIC,CHIP | 22nF | 10% | 50V |
| C6P10 | 1-126-458-61 | ELECT | 1uF | 20% | 50V |
| C6P11 | 1-126-458-61 | ELECT | 1uF | 20% | 50V |
| C6P13 | 1-115-339-11 | CERAMIC,CHIP | 100nF | 10% | 50V |
| C701 | 1-126-925-11 | ELECT | 470uF | 20% | 10V |
| C703 | 1-163-275-11 | CERAMIC,CHIP | 1nF | 10% | 50V |
| C7T01 | 1-161-323-11 | CERAMIC,MLC-AXIAL | 1nF | 10% | 50V (ED828/ED925/ED929/EZ725/EZ727) |
| C7T02 | 1-161-323-11 | CERAMIC,MLC-AXIAL | 1nF | 10% | 50V (ED828/ED925/ED929/EZ725/EZ727) |
| C806 | 1-163-251-11 | CERAMIC,CHIP | 0.1nF | 5% | 50V |
| C822 | 1-163-251-11 | CERAMIC,CHIP | 0.1nF | 5% | 50V |
| CT01 | 1-126-785-11 | ELECT | 47uF | 20% | 10V |
| CT02 | 1-115-339-11 | CERAMIC,CHIP | 100nF | +80-20% | 50V (EZ727) |
| CT04 | 1-115-339-11 | CERAMIC,CHIP | 100nF | +80-20% | 50V (EXCEPT EZ727) |
| | | < DIODE > | | | |
| D1P101 | 1-804-407-11 | DIODE 1N4148 | | | |
| D1P102 | 1-804-407-11 | DIODE 1N4148 (Hi-Fi model) | | | |
| D1P103 | 1-804-407-11 | DIODE 1N4148 (Hi-Fi model) | | | |
| D1SD11 | 1-804-412-11 | DIODE F1T4 | | | |
| D1SD31 | 1-804-412-11 | DIODE F1T4 | | | |
| D1SF05 | 1-804-413-11 | DIODE 1T5 (E, HK, ME) | | | |
| D1SF12 | 1-804-412-11 | DIODE F1T4 (E, HK, ME) | | | |
| D1SR11 | 1-804-407-11 | DIODE 1N4148 (AUS) | | | |
| D1SS01 | 1-804-413-11 | DIODE 1T5 | | | |
| D1SS02 | 1-804-413-11 | DIODE 1T5 | | | |
| D1SS03 | 1-804-413-11 | DIODE 1T5 | | | |
| D1SS04 | 1-804-413-11 | DIODE 1T5 | | | |
| D1SS11 | 1-804-408-11 | DIODE UF4007 | | | |
| D1SS31 | 1-804-412-11 | DIODE F1T4 | | | |
| D1SS32 | 1-804-411-11 | DIODE UG2D | | | |
| D1SS33 | 1-804-782-11 | DIODE SG45 | | | |
| D301 | 1-804-407-11 | DIODE 1N4148 | | | |
| D4N01 | 1-804-407-11 | DIODE 1N4148 (ED925/ED929/EZ725/EZ727) | | | |
| D4N02 | 1-804-407-11 | DIODE 1N4148 (ED925/ED929/EZ725/EZ727) | | | |
| D603 | 1-804-407-11 | DIODE 1N4148 | | | |
| D701 | 1-804-407-11 | DIODE 1N4148 | | | |
| D702 | 1-804-407-11 | DIODE 1N4148 | | | |
| D703 | 1-804-407-11 | DIODE 1N4148 | | | |
| D704 | 1-804-407-11 | DIODE 1N4148 | | | |
| DT701 | 1-518-827-11 | LED DISPLAY LTG-0132M | | | |
| LD601 | 1-804-438-11 | LED-IR (T/S LED) | | | |
| LDT01 | 1-804-796-11 | LED-IR | | | |
| ZD1P01 | 1-804-416-11 | DIODE MTZJ5.1B (Hi-Fi model) | | | |
| ZD1P02 | 1-804-416-11 | DIODE MTZJ5.1B | | | |
| ZD1P03 | 1-804-417-11 | DIODE MTZJ9.1B (Hi-Fi model) | | | |
| ZD1P04 | 1-804-417-11 | DIODE MTZJ9.1B | | | |
| ZD1SS1 | 1-804-415-11 | DIODE UZP43B (AUS) | | | |
| ZD801 | 1-804-803-11 | DIODE MTZ6.2B (ED225) | | | |
| | | < FUSE > | | | |
| ⚠F1SS01 | 1-576-526-11 | FUSE-CARTRIDGE (1.6A/250V) | | | |
| | | < FUSE CLIP > | | | |
| FC1SS1 | 1-576-527-11 | FUSE-CLIP | | | |
| FC1SS2 | 1-576-527-11 | FUSE-CLIP | | | |
| | | < IC > | | | |
| IC1SF1 | 1-804-771-11 | IC STR-G6551 (E, HK, ME) | | | |
| ⚠IC1SS1 | 1-804-784-11 | PHOTO-COUPLER | | | |
| IC1SS2 | 1-804-445-11 | IC KA431Z | | | |
| IC301 | 1-804-702-11 | IC LA71750M (AUS:EZ121/EZ424/EZ725) | | | |
| IC301 | 1-804-804-11 | IC LA71730M (AUS:EZ727, E, HK, ME) | | | |
| IC4N01 | 1-804-795-11 | IC MSP3417D(PQFP) (ED925/ED929/EZ725/EZ727) | | | |
| IC501 | 1-804-703-11 | IC LA72646M (Hi-Fi model) | | | |
| IC604 | 1-804-807-11 | IC PST572K | | | |
| IC608 | 1-804-480-11 | IC 7042 | | | |
| IC701 | 1-804-706-11 | IC PT6959 | | | |
| ICT01 | 1-804-806-11 | IC GMS36112M-RB064 D (EXCEPT EZ727) | | | |
| | | < FILTER > | | | |
| ⚠L1SS02 | 1-424-830-11 | FILTER LINE NOISE | | | 30mH |
| L4N04 | 1-400-085-11 | INDUCTOR (ED925/ED929/EZ725/EZ727) | | | |
| L502 | 1-400-086-11 | CORE-FERRITE BEAD | | | |
| | | < TRANS > | | | |
| ⚠PT1SS1 | 1-437-395-11 | TRANS SWITCHING | | | 2mH (AUS) |
| ⚠PT1SS1 | 1-437-827-11 | TRANS SWITCHING | | | 0.65mH (E, HK, ME) |
| | | < PHOTO INTERRUPTER > | | | |
| PT601 | 1-804-770-11 | PHOTO-INTERRUPTER | | | CY5894102 |
| PT602 | 1-804-770-11 | PHOTO-INTERRUPTER | | | CY5894102 |
| | | < TRANSISTOR > | | | |
| Q1P101 | 1-804-424-11 | TRANSISTOR | | | KSC2328A-Y |
| Q1P102 | 1-804-424-11 | TRANSISTOR | | | KSC2328A-Y |
| Q1P103 | 1-804-424-11 | TRANSISTOR | | | KSC2328A-Y (Hi-Fi model) |
| Q1P104 | 1-804-423-11 | TRANSISTOR | | | KSA928A-Y |
| Q1P105 | 1-804-427-11 | TRANSISTOR | | | KSR1001 |
| Q1P106 | 1-804-421-11 | TRANSISTOR | | | KSC945 (Hi-Fi model) |
| Q1P107 | 1-804-429-11 | TRANSISTOR | | | KSR2001 (Hi-Fi model) |
| Q1P108 | 1-804-424-11 | TRANSISTOR | | | KSC2328A-Y (Hi-Fi model) |
| Q1SR01 | 1-804-783-11 | TR-POWER (AUS) | | | |
| Q1SR02 | 1-804-422-11 | TRANSISTOR | | | KTC3203-Y (AUS) |
| Q350 | 1-804-420-11 | TRANSISTOR | | | KSA733 |

**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

| Ref. No. | Part No. | Description | | | Remarks |
|---|---|---|---|---|---|
| Q3A01 | 1-804-421-11 | TRANSISTOR | KSC945 | | |
| Q3A02 | 1-804-420-11 | TRANSISTOR | KSA733 | | |
| Q3A03 | 1-804-422-11 | TRANSISTOR | KTC3203-Y | | |
| Q3A04 | 1-804-422-11 | TRANSISTOR | KTC3203-Y | | |
| Q3A05 | 1-804-422-11 | TRANSISTOR | KTC3203-Y | | |
| Q3A06 | 1-804-420-11 | TRANSISTOR | KSA733 | | |
| Q6P01 | 1-804-420-11 | TRANSISTOR | KSA733 | | |
| Q6P02 | 1-804-420-11 | TRANSISTOR | KSA733 | | |
| Q809 | 1-804-421-11 | TRANSISTOR | KSC945 | | |
| QT01 | 1-804-766-11 | TRANSISTOR | 2SC2412K (EZ727) | | |
| | | < RESISTOR > | | | |
| J301 | 1-216-295-11 | RES-CHIP | 0 | 5% | 1/10W (Hi-Fi model) |
| J813 | 1-216-295-11 | RES-CHIP | 0 | 5% | 1/10W (Mono model) |
| J814 | 1-216-295-11 | RES-CHIP | 0 | 5% | 1/10W (Mono model) |
| R1P101 | 1-247-825-11 | CARBON | 560 | 5% | 1/4W |
| R1P102 | 1-216-667-11 | RES-CHIP | 4.7K | 5% | 1/10W (Hi-Fi model) |
| R1P103 | 1-247-815-11 | CARBON | 220 | 5% | 1/8W (Hi-Fi model) |
| R1P104 | 1-216-627-11 | RES-CHIP | 100 | 5% | 1/10W (Hi-Fi model) |
| R1P105 | 1-216-675-11 | RES-CHIP | 10K | 5% | 1/10W (Hi-Fi model) |
| R1P106 | 1-247-839-11 | CARBON | 2.2K | 5% | 1/8W |
| R1P107 | 1-216-699-11 | RES-CHIP | 100K | 5% | 1/10W |
| R1P108 | 1-247-845-11 | CARBON | 3.9K | 5% | 1/4W |
| R1P109 | 1-247-839-11 | CARBON | 2.2K | 5% | 1/8W (Hi-Fi model) |
| R1P110 | 1-216-627-11 | RES-CHIP | 100 | 5% | 1/10W |
| R1P115 | 1-247-817-11 | CARBON | 270 | 5% | 1/8W |
| R1SD11 | 1-247-880-11 | CARBON | 110K | 5% | 1/8W (AUS) |
| R1SD12 | 1-245-352-11 | CARBON | 680 | 5% | 1/8W (E:ED225/ED825, ME) |
| R1SD12 | 1-247-819-11 | CARBON | 330 | 5% | 1/8W (AUS) |
| R1SD13 | 1-247-880-11 | CARBON | 110K | 5% | 1/8W (AUS) |
| R1SD14 | 1-247-880-11 | CARBON | 110K | 5% | 1/8W (AUS) |
| R1SD15 | 1-247-880-11 | CARBON | 110K | 5% | 1/8W (AUS) |
| R1SD16 | 1-215-901-11 | METAL OXIDE | 33K | 5% | 2W |
| R1SD31 | 1-247-815-11 | CARBON | 2200 | 5% | 1/8W (AUS) |
| R1SD31 | 1-247-823-11 | CARBON | 470 | 5% | 1/8W (E, HK, ME) |
| R1SD32 | 1-247-831-11 | CARBON | 1K | 5% | 1/8W (E, HK, ME) |
| R1SD32 | 1-247-833-11 | CARBON | 1.2K | 5% | 1/8W (AUS) |
| R1SF15 | 1-247-843-11 | CARBON | 3.3K | 5% | 1/8W (E, HK, ME) |
| R1SF19 | 1-247-831-11 | CARBON | 1K | 5% | 1/8W (E, HK, ME) |
| R1SF20 | 1-216-363-11 | METAL OXIDE | 0.33 | 5% | 2W (E, HK, ME) |
| R1SF21 | 1-247-903-11 | CARBON | 1M | 5% | 1/2W (E, HK, ME) |
| R1SR11 | 1-216-367-11 | METAL OXIDE | 0.68 | 5% | 2W (AUS) |
| R1SR12 | 1-244-369-11 | METAL OXIDE | 300 | 5% | 1W (AUS) |
| R1SR14 | 1-247-819-11 | CARBON | 330 | 5% | 1/8W (AUS) |
| R1SS03 | 1-245-346-11 | R-FUSIBLE | 10 | 5% | 2W (AUS:EZ121/EZ424, E, HK, ME) |
| R1SS10 | 1-244-373-11 | R-CEMENT | 2.7 | 10% | 2W |
| R1SS11 | 1-215-901-11 | METAL OXIDE | 33K | 5% | 2W |
| R1SS32 | 1-216-651-11 | RES-CHIP | 1K | 5% | 1/10W |
| R1SS33 | 1-244-372-11 | METAL | 3K | 1% | 1/8W |
| R1SS34 | 1-244-371-11 | METAL | 2.2K | 1% | 1/8W |
| R316 | 1-216-673-11 | RES-CHIP | 8.2K | 5% | 1/10W |
| R320 | 1-247-861-11 | CARBON | 18K | 5% | 1/8W |
| R322 | 1-247-861-11 | CARBON | 18K | 5% | 1/8W |
| R323 | 1-216-665-11 | RES-CHIP | 3.9K | 5% | 1/10W |
| R327 | 1-216-667-11 | RES-CHIP | 4.7K | 5% | 1/10W |
| R329 | 1-216-661-11 | RES-CHIP | 2.7K | 5% | 1/10W |
| R333 | 1-216-693-11 | RES-CHIP | 56K | 5% | 1/10W |
| R334 | 1-216-655-11 | RES-CHIP | 1.5K | 5% | 1/10W (Hi-Fi model) |
| R372 | 1-216-651-11 | RES-CHIP | 1K | 5% | 1/10W |
| R374 | 1-216-627-11 | RES-CHIP | 100 | 5% | 1/10W |
| R3A09 | 1-216-295-11 | RES-CHIP | 0 | 5% | 1/10W |
| R3A11 | 1-216-659-11 | RES-CHIP | 2.2K | 5% | 1/10W |
| R3A12 | 1-216-627-11 | RES-CHIP | 100 | 5% | 1/10W |
| R3A13 | 1-216-691-11 | RES-CHIP | 47K | 5% | 1/10W |
| R3A16 | 1-216-675-11 | RES-CHIP | 10K | 5% | 1/10W |
| R3A17 | 1-216-659-11 | RES-CHIP | 2.2K | 5% | 1/10W |
| R3A18 | 1-216-659-11 | RES-CHIP | 2.2K | 5% | 1/10W |
| R3A24 | 1-216-683-11 | RES-CHIP | 22K | 5% | 1/10W |
| R3A27 | 1-216-670-11 | RES-CHIP | 6.2K | 5% | 1/10W (Mono model) |
| R3A28 | 1-216-066-11 | RES-CHIP | 5.1K | 5% | 1/10W (Mono model) |
| R3A31 | 1-216-295-11 | RES-CHIP | 0 | 5% | 1/10W |
| R3A50 | 1-216-066-11 | RES-CHIP | 5.1K | 5% | 1/10W |
| R3A51 | 1-216-675-11 | RES-CHIP | 10K | 5% | 1/10W |
| R401 | 1-216-691-11 | RES-CHIP | 47K | 5% | 1/10W |
| R402 | 1-216-627-11 | RES-CHIP | 100 | 5% | 1/10W |
| R403 | 1-216-627-11 | RES-CHIP | 100 | 5% | 1/10W |
| R404 | 1-216-627-11 | RES-CHIP | 100 | 5% | 1/10W |
| R407 | 1-216-659-11 | RES-CHIP | 2.2K | 5% | 1/10W (Hi-Fi model) |
| R407 | 1-216-673-11 | RES-CHIP | 8.2K | 5% | 1/10W (Mono model) |
| R408 | 1-247-833-11 | CARBON | 1.2K | 5% | 1/8W |
| R4N01 | 1-216-651-11 | RES-CHIP | 1K | 5% | 1/10W (ED925/ED929/EZ725/EZ727) |
| R4N02 | 1-216-627-11 | RES-CHIP | 100 | 5% | 1/10W (ED925/ED929/EZ725/EZ727) |

## MAIN

| Ref. No. | Part No. | Description | | | Remarks |
|---|---|---|---|---|---|
| R4N03 | 1-216-627-11 | RES-CHIP | 100 | 5% | 1/10W (ED925/ED929/EZ725/EZ727) |
| R4N04 | 1-216-661-11 | RES-CHIP | 27K | 5% | 1/10W (ED925/ED929/EZ725/EZ727) |
| R502 | 1-216-670-11 | RES-CHIP | 6.2K | 5% | 1/10W (Hi-Fi model) |
| R503 | 1-216-643-11 | RES-CHIP | 470 | 5% | 1/10W (Hi-Fi model) |
| R506 | 1-216-670-11 | RES-CHIP | 6.2K | 5% | 1/10W (Hi-Fi model) |
| R508 | 1-216-670-11 | RES-CHIP | 6.2K | 5% | 1/10W (ED828/ED925/ED929/EZ725/EZ727) |
| R509 | 1-216-670-11 | RES-CHIP | 6.2K | 5% | 1/10W (HI-Fi model) |
| R512 | 1-216-687-11 | RES-CHIP | 33K | 5% | 1/10W (HI-Fi model) |
| R514 | 1-216-691-11 | RES-CHIP | 47K | 5% | 1/10W (HI-Fi model) |
| R517 | 1-216-670-11 | RES-CHIP | 6.2K | 5% | 1/10W (HI-Fi model) |
| R519 | 1-216-670-11 | RES-CHIP | 6.2K | 5% | 1/10W (ED828/ED925/ED929/EZ725/EZ727) |
| R546 | 1-216-651-11 | RES-CHIP | 1K | 5% | 1/10W (HI-Fi model) |
| R547 | 1-216-651-11 | RES-CHIP | 1K | 5% | 1/10W (HI-Fi model) |
| R570 | 1-216-651-11 | RES-CHIP | 1K | 5% | 1/10W (HI-Fi model) |
| R571 | 1-216-693-11 | RES-CHIP | 56K | 5% | 1/10W (HI-Fi model) |
| R601 | 1-247-831-11 | CARBON | 1K | 5% | 1/8W |
| R602 | 1-247-831-11 | CARBON | 1K | 5% | 1/8W |
| R603 | 1-247-831-11 | CARBON | 1K | 5% | 1/8W |
| R604 | 1-247-831-11 | CARBON | 1K | 5% | 1/8W |
| R605 | 1-247-831-11 | CARBON | 1K | 5% | 1/8W |
| R607 | 1-247-831-11 | CARBON | 1K | 5% | 1/8W |
| R608 | 1-247-873-11 | CARBON | 56K | 5% | 1/8W |
| R609 | 1-247-873-11 | CARBON | 56K | 5% | 1/8W |
| R610 | 1-247-831-11 | CARBON | 1K | 5% | 1/8W |
| R611 | 1-247-831-11 | CARBON | 1K | 5% | 1/8W |
| R613 | 1-216-651-11 | RES-CHIP | 1K | 5% | 1/10W |
| R614 | 1-247-831-11 | CARBON | 1K | 5% | 1/8W |
| R631 | 1-216-651-11 | RES-CHIP | 1K | 5% | 1/10W |
| R634 | 1-216-691-11 | RES-CHIP | 47K | 5% | 1/10W |
| R635 | 1-216-691-11 | RES-CHIP | 47K | 5% | 1/10W |
| R636 | 1-216-691-11 | RES-CHIP | 47K | 5% | 1/10W |
| R638 | 1-247-831-11 | CARBON | 1K | 5% | 1/8W |
| R639 | 1-247-831-11 | CARBON | 1K | 5% | 1/8W |
| R640 | 1-216-675-11 | RES-CHIP | 10K | 5% | 1/10W |
| R641 | 1-216-643-11 | RES-CHIP | 470 | 5% | 1/10W |
| R642 | 1-216-643-11 | RES-CHIP | 470 | 5% | 1/10W |
| R644 | 1-247-831-11 | CARBON | 1K | 5% | 1/8W |
| R656 | 1-216-675-11 | RES-CHIP | 10K | 5% | 1/10W |
| R657 | 1-247-875-11 | CARBON | 68K | 5% | 1/8W |
| R661 | 1-216-687-11 | RES-CHIP | 33K | 5% | 1/10W |
| R666 | 1-216-643-11 | RES-CHIP | 470 | 5% | 1/10W |
| R667 | 1-216-643-11 | RES-CHIP | 470 | 5% | 1/10W |
| R668 | 1-216-675-11 | RES-CHIP | 10K | 5% | 1/10W |
| R669 | 1-216-675-11 | RES-CHIP | 10K | 5% | 1/10W |
| R670 | 1-216-667-11 | RES-CHIP | 4.7K | 5% | 1/10W |
| R671 | 1-216-667-11 | RES-CHIP | 4.7K | 5% | 1/10W |
| R672 | 1-216-667-11 | RES-CHIP | 4.7K | 5% | 1/10W |
| R675 | 1-247-813-11 | CARBON | 180 | 5% | 1/4W |
| R676 | 1-216-686-11 | RES-CHIP | 30K | 5% | 1/10W |
| R678 | 1-216-683-11 | RES-CHIP | 22K | 5% | 1/10W |
| R679 | 1-247-815-11 | CARBON | 220 | 5% | 1/8W |
| R682 | 1-216-683-11 | RES-CHIP | 22K | 5% | 1/10W |
| R690 | 1-216-693-11 | RES-CHIP | 56K | 5% | 1/10W |
| R691 | 1-247-815-11 | CARBON | 220 | 5% | 1/8W |
| R692 | 1-247-793-11 | CARBON | 27 | 5% | 1/8W |
| R693 | 1-216-691-11 | RES-CHIP | 47K | 5% | 1/10W |
| R694 | 1-216-691-11 | RES-CHIP | 47K | 5% | 1/10W |
| R695 | 1-216-627-11 | RES-CHIP | 100 | 5% | 1/10W (HK) |
| R696 | 1-247-831-11 | CARBON | 1K | 5% | 1/8W |
| R697 | 1-216-627-11 | RES-CHIP | 100 | 5% | 1/10W (ED225/ED323/ED825/ED828/ED929/EZ121/EZ424) |
| R698 | 1-216-675-11 | RES-CHIP | 10K | 5% | 1/10W |
| R6P07 | 1-216-635-11 | RES-CHIP | 220 | 5% | 1/10W |
| R6P09 | 1-216-659-11 | RES-CHIP | 2.2K | 5% | 1/10W |
| R6P10 | 1-247-815-11 | CARBON | 220 | 5% | 1/8W |
| R731 | 1-216-675-11 | RES-CHIP | 10K | 5% | 1/10W |
| R740 | 1-247-793-11 | CARBON | 27 | 5% | 1/8W |
| R753 | 1-216-699-11 | RES-CHIP | 100K | 5% | 1/10W (Hi-Fi model) |
| R813 | 1-216-651-11 | RES-CHIP | 1K | 5% | 1/10W |
| R814 | 1-216-651-11 | RES-CHIP | 1K | 5% | 1/10W |
| R815 | 1-216-651-11 | RES-CHIP | 1K | 5% | 1/10W |
| R816 | 1-216-651-11 | RES-CHIP | 1K | 5% | 1/10W |
| RT01 | 1-217-671-11 | RES-CHIP | 1 | 5% | 1/10W (EXCEPT EZ727) |
| RT01 | 1-216-308-11 | RES-CHIP | 4.7 | 5% | 1/10W (EZ727) |
| RT02 | 1-216-009-11 | RES-CHIP | 220 | 5% | 1/10W (EZ727) |
| W050 | 1-216-295-11 | RES-CHIP | 0 | 5% | 1/10W (ED825/ED828) |
| W079 | 1-216-295-11 | RES-CHIP | 0 | 5% | 1/10W (Mono model) |
| W172 | 1-216-295-11 | RES-CHIP | 0 | 5% | 1/10W |
| W199 | 1-216-295-11 | RES-CHIP | 0 | 5% | 1/10W |
| W376 | 1-216-295-11 | RES-CHIP | 0 | 5% | 1/10W |
| W383 | 1-216-295-11 | RES-CHIP | 0 | 5% | 1/10W |
| W384 | 1-216-295-11 | RES-CHIP | 0 | 5% | 1/10W |
| W386 | 1-216-295-11 | RES-CHIP | 0 | 5% | 1/10W |
| W506 | 1-216-295-11 | RES-CHIP | 0 | 5% | 1/10W |
| W515 | 1-216-295-11 | RES-CHIP | 0 | 5% | 1/10W |
| W750 | 1-216-295-11 | RES-CHIP | 0 | 5% | 1/10W |
| W751 | 1-216-295-11 | RES-CHIP | 0 | 5% | 1/10W |
| W752 | 1-216-295-11 | RES-CHIP | 0 | 5% | 1/10W |

| Ref. No. | Part No. | Description | Remarks |
|---|---|---|---|
| | | < MODULE > | |
| RM701 | 1-477-308-11 | MODULE REMOCON TSOP2238WE1 | |
| | | < PHOTO TRANSISTOR > | |
| S601 | 1-804-439-11 | PHOTO TRANSISTOR | |
| S602 | 1-804-439-11 | PHOTO TRANSISTOR | |
| | | < TERMINAL > | |
| TM401 | 1-693-589-11 | TM BLOCK (in from antenna) (AUS, E, ME) | |
| TM401 | 1-693-590-11 | TM BLOCK (in from antenna) (HK) | |
| | | < VARISTOR > | |
| ⚠VA1SS1 | 1-804-437-11 | VARISTOR (600A/470V) | |
| | | < VAIBRATOR > | |
| XT01 | 1-795-604-11 | ERSONATOR-CERAMIC (4.0MHz) D156(EZ727) | |
| XT01 | 1-795-616-11 | RESONATOR-CERAMIC (3.84MHZ) | (EXCEPT EZ727) |
| XT301 | 1-795-330-11 | CRYSTAL-UNIT (4.433619MHz) | |
| XT302 | 1-795-629-11 | CRYSTAL-UNIT (3.579545MHz) | (AUS:EZ727, E, HK, ME ) |
| XT4N01 | 1-795-615-11 | CRYSTAL-UNIT (18.432MHz) | (ED925/ED929/EZ725/EZ727) |
| XT601 | 1-795-332-11 | CRYSTAL-UNIT (32.768KHz) | |
| XT602 | 1-795-331-11 | CRYSTAL-UNIT (8MHz) | |
| | | MISCELLANEOUS | |
| | | ********** | |
| ⚠4 | 1-823-023-11 | POWER CORD (ED225/ED323) | |
| ⚠4 | 1-824-231-11 | POWER CORD (EZ121/EZ424) | |
| ⚠54 | 1-823-023-11 | POWER CORD (ED825/ED828/ED925/ED929) | |
| ⚠54 | 1-824-231-11 | POWER CORD (EZ725/EZ727) | |
| 109 | 1-796-440-11 | DRUM ASSY (ED323) | |
| 109 | 1-796-441-11 | DRUM ASSY (ED828) | |
| 109 | 1-804-708-11 | DRUM ASSY (EZ121/ED225) | |
| 109 | 1-804-709-11 | DRUM ASSY (EZ424) | |
| 109 | 1-804-710-11 | DRUM ASSY | (ED825/ED925/ED929/EZ725/EZ727) |
| 118 | 1-796-434-11 | MOTOR-LOADING ASSY | |
| 152 | 1-796-432-11 | MOTOR-CAPSTAN | |
| | | ********** | |
| | | HARDWARE LIST | |
| | | ********** | |
| #1 | 7-685-548-19 | SCREW TAPTITE | |
| #2 | 7-685-661-11 | SCREW-BH | |
| #3 | 7-682-144-01 | SCREW-MACHINE | |
| #4 | 7-682-647-01 | SCREW-ASSY MACH | |
| #5 | 7-621-759-35 | SCREW-ASSY TAPT | |
| #6 | 7-685-133-11 | SCREW-CAPSTAN | |
| #7 | 7-685-132-11 | SCREW-TAPTITE | |

| Ref. No. | Part No. | Description | Remarks |
|---|---|---|---|
| | | ACCESSORIES & PACKING MATERIALS | |
| | | ********** | |
| | 1-477-367-11 | REMOTE COMMANDER (RMT-V408) | (ED225/ED323/EZ725/ED825/ED828/ED925/EZ121) |
| | 1-477-368-11 | REMOTE COMMANDER (RMT-V408A) | (ED929/EZ424) |
| | 1-477-369-11 | REMOTE COMMANDER (RMT-V409) (EZ727) | |
| | 3-073-156-11 | MANUAL, INSTRUCTION (ENGLISH) | (ED225/ED323/ED825/ED828/ED925/ED929) |
| | 3-073-156-21 | MANUAL, INSTRUCTION (ARABIC) | (ED323/ED828) |
| | 3-073-156-31 | MANUAL, INSTRUCTION (PERSIAN) | (ED323SG/ED828SG) |
| | 3-073-156-41 | MANUAL, INSTRUCTION | (TRADITIONAL CHINESE) (ED929) |
| | 3-074-911-11 | MANUAL, INSTRUCTION (ENGLISH) | (EZ121/EZ424/EZ725/EZ727) |
| | 3-075-088-01 | DOOR BATTERY REMOCON | (for RMT-V408/V408A/V409) |

**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

**9-929-726-11**

**Sony Corporation**
**Home Video Company**

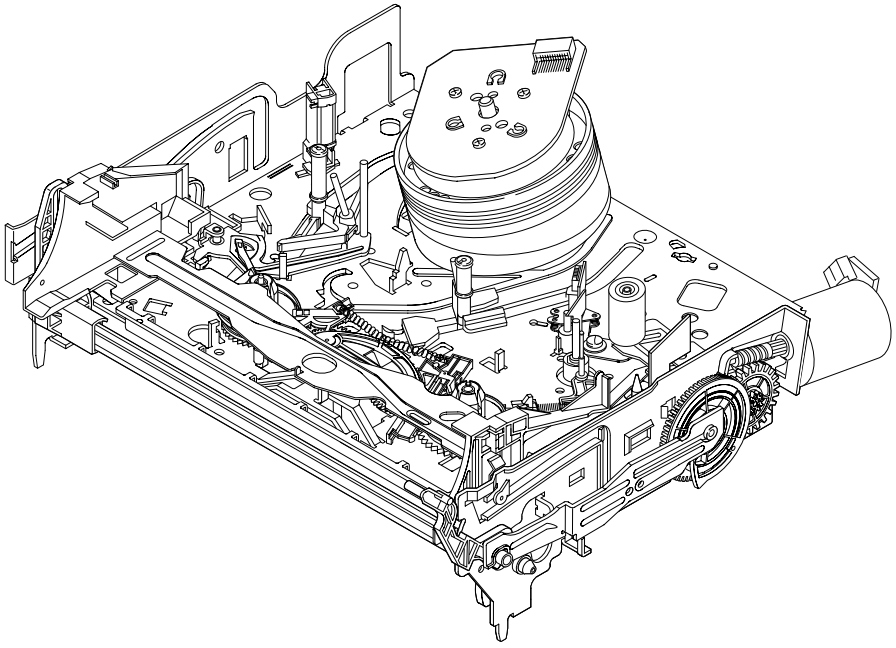


2002D0500-1
©2002.4
**Published by Quality Assurance Dept.**

# VHS MECHANICAL ADJUSTMENT MANUAL VII

## TS-10 MECHANISM

**Please use this manual with the service manual.**



VHS MECHANISM DECK

SONY®

## TABLE OF CONTENTS


### 1. Disassembly and Reassembly

1-1 Deck Parts Locations ..... 3
1-1-1 Top View ..... 3
1-1-2 Bottom View ..... 5
1-2 Main Deck ..... 6
1-2-1 Lever FL Door Removal ..... 6
1-2-2 Holder FL Cassette Ass'y Removal ..... 6
1-2-4 Lever FL Arm Ass'y Removal ..... 7
1-2-3 Slider FL Drive, Gear FL Cam Removal ..... 7
1-2-5 Gear Worm Wheel Removal ..... 8
1-2-6 Motor Loading Ass'y Removal ..... 8
1-2-7 Bracket Gear, Gear Joint 2, 1 Removal ..... 9
1-2-8 Gear Loading Drive, Slider Cam, Lever Load S, T Ass'y Removal ..... 9
1-2-9 Gear Loading Drive, Slider Cam, Lever Load S, T Ass'y Assembly ..... 10
1-2-10 Lever Pinch Drive, Lever Tension Drive Removal ..... 10
1-2-11 Lever Tension Ass'y, Band Brake Ass'y Removal ..... 11
1-2-12 Lever Brake S, T Ass'y Removal ..... 11
1-2-13 Gear Idle Ass'y Removal ..... 12
1-2-14 Disk S, T Reel Removal ..... 12
1-2-15 Holder Clutch Ass'y Removal ..... 13
1-2-16 Lever Up Down Ass'y, Gear Center Ass'y Removal ..... 13
1-2-18 Lever Unit Pinch Ass'y, Plate Joint, Spring Pinch Drive Removal ..... 14
1-2-17 Guide Cassette Door Removal ..... 14
1-2-19 Lever #9 Guide Ass'y Removal ..... 15
1-2-20 FE Head Removal ..... 15
1-2-21 ACE Head Removal ..... 16
1-2-22 Slider S, T Ass'y Removal ..... 16
1-2-23 Plate Ground Deck, Cylinder Ass'y Removal ..... 17
1-2-24 Belt Pulley Removal ..... 17
1-2-26 Damper Capstan, Motor Capstan Ass'y Removal ..... 18
1-2-27 How to Eject the Cassette Tape ..... 18
1-3 The table of clearing, Lubrication and replacement time about principal parts ..... 19
1-4 Tools and fixtures reguired for service.....20

### 2. Alignment and Adjustment

2-1 Tape Transport System and Adjustment Locations ..... 21
2-2 Tape Transport System Adjustment ..... 22
2-2-1 ACE Head Assembly Adjustment ..... 22
2-2-2 Linearity Adjustment (Guide roller S, T adjustment) ..... 23
2-2-3 Check Transitional Operation from RPS to Play ..... 24
2-2-4 Envelope Check ..... 24
2-2-5 Tape Wrinkle Check ..... 24
2-3 Reel Torque ..... 24

# 1. Disassembly and Reassembly

## 1-1 Deck Parts Locations

### 1-1-1 Top View

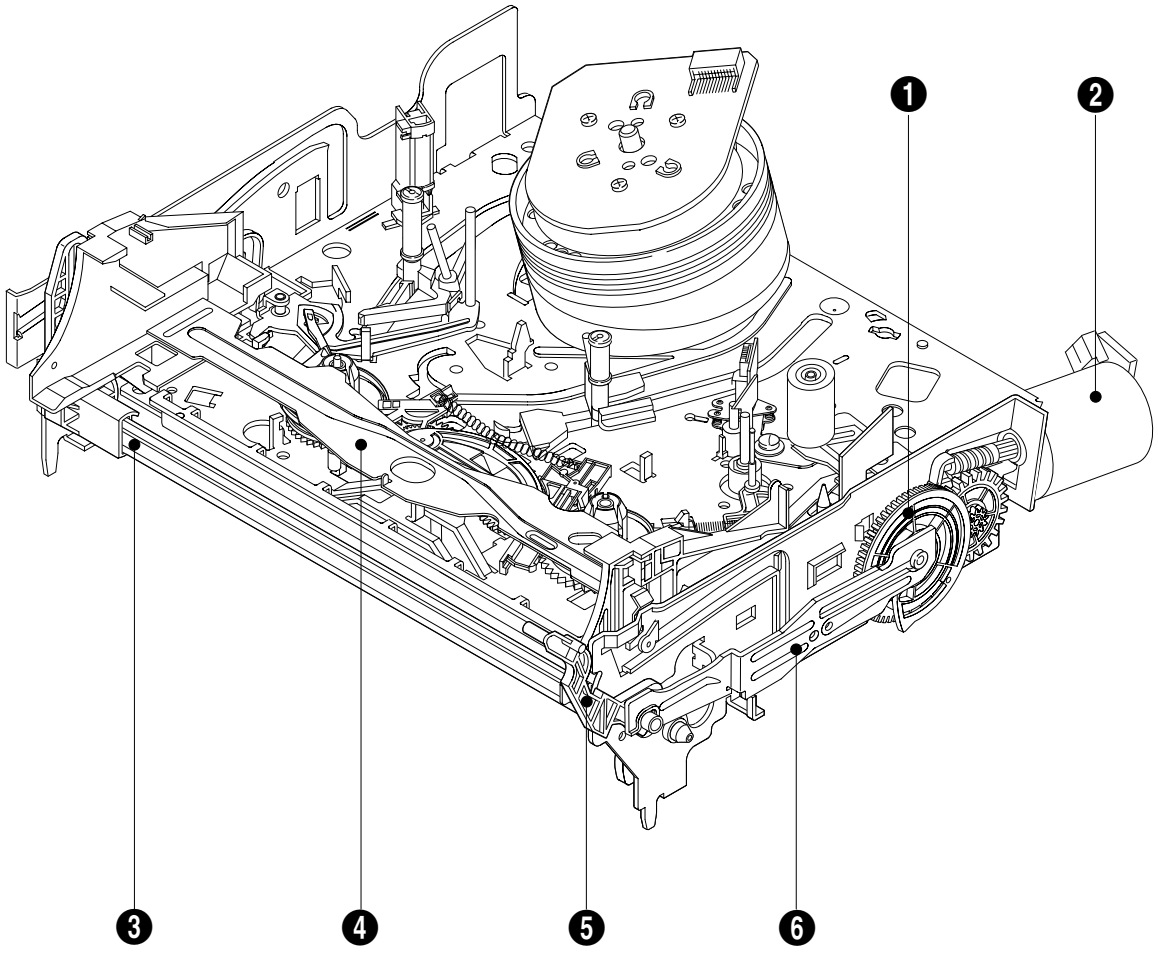



Fig. 1-1 Top parts Location-1

1. GEAR FL CAM
2. MOTOR LOADING ASS'Y
3. LEVER FL ARM ASS'Y
4. HOLDER FL CASSETTE ASS'Y
5. LEVER FL DOOR
6. SLIDER FL DRIVE

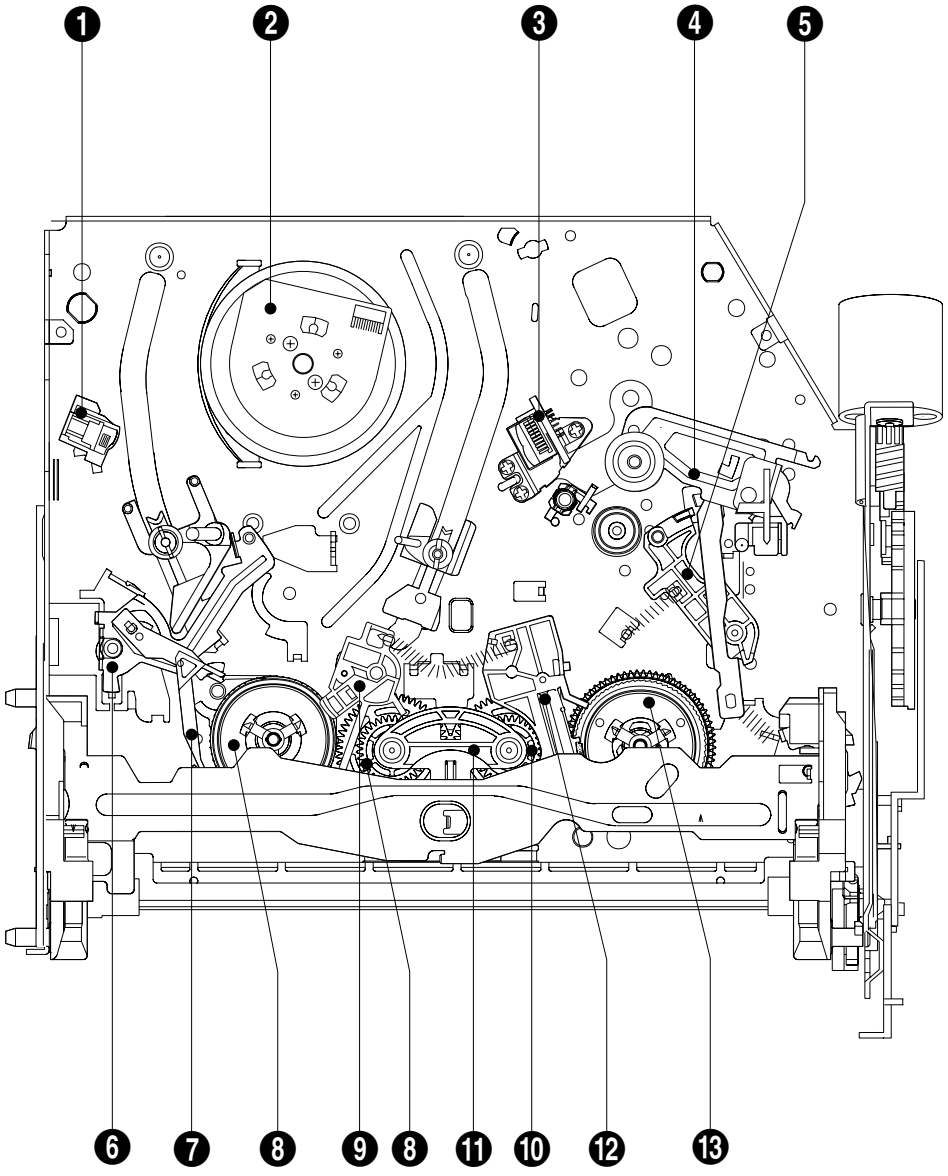



Fig. 1-2 Top Parts Location-2

❶ FE HEAD
❷ CYLINDER ASS'Y
❸ ACE HEAD ASS'Y
❹ LEVER UNIT PINCH ASS'Y
❺ LEVER #9 GUIDE ASS'Y
❻ LEVER TENSION ASS'Y
❼ BAND BRAKE ASS'Y
❽ DISK S REEL
❾ LEVER S BRAKE ASS'Y
❿ GEAR IDLE
⓫ LEVER IDLE
⓬ LEVER T BRAKE ASS'Y
⓭ DISK T REEL

### 1-1-2 Bottom View

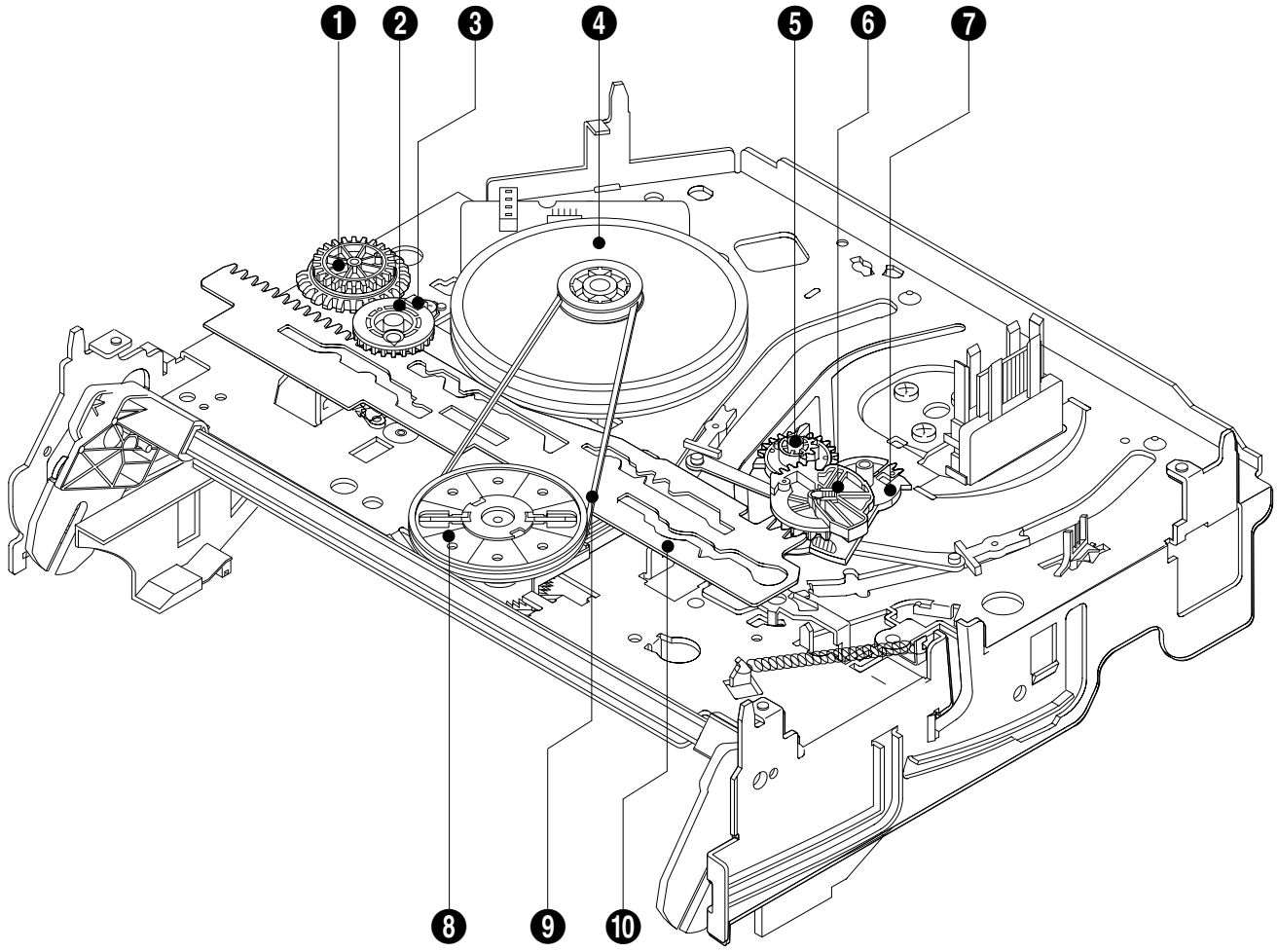



Fig. 1-3 Bottom Parts Location

❶ GEAR JOINT 1
❷ GEAR JOINT 2
❸ BRACKET GEAR
❹ MOTOR CAPSTAN ASS'Y
❺ LEVER T LOAD ASS'Y
❻ GEAR LOADING DRIVE
❼ LEVER S LOAD ASS'Y
❽ HOLDER CLUTCH ASS'Y
❾ BELT PULLEY
❿ SLIDER CAM

## 1-2 Main Deck

### 1-2-1 Lever FL Door Removal

1) Push the Holder FL Cassette Ass'y ❶ about 20mm in the direction of arrow “A”.
2) Rotate the Lever FL Door ❷ in the direction of arrow “B”.
3) Release the Hook ❸ and Remove the Lever FL Door ❷ in the direction of arrow “C”.

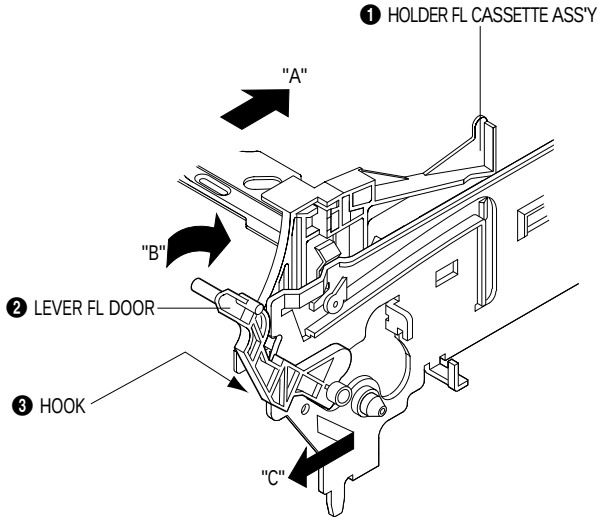



Fig. 1-4 Lever FL Door Removal

### 1-2-2 Holder FL Cassette Ass’y Removal

1) Pull the Holder FL Cassette Ass'y ❶ to the eject position.
2) Pull the Holder FL Cassette Ass'y ❶ as grasping the Holder FL Cassette Ass'y ❶ and Lever FL Cassette-R ❷ in the same time to release hooking from Main Base until the Boss [A] of Holder FL Cassette Ass'y ❶ is taken out from the Rail [B].
3) Lift the Holder FL Cassette Ass'y ❶, in this time, you have to grasp the Lever FL Cassette-R ❷ Continuously until the Holder FL Cassette Ass'y ❶ is taken out completely.

**Note** : Be sure to insert Lever FL Cassette-R ❷ in the direction of “A” to prevent separation and breakage of the Lever FL Cassette-R ❷ at disassembling and reassembling.

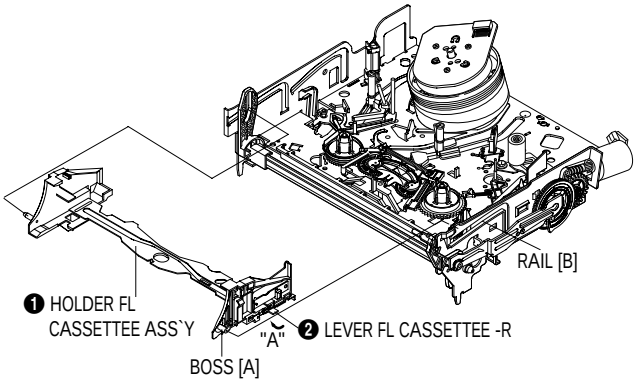



Fig. 1-5 Holder FL Cassette Ass’y Removal

### 1-2-3 Slider FL Drive, Gear FL Cam Removal

1) Pull the Slider FL Drive ❶ to the front direction.
2) Remove the Slider FL Drive ❶ in the direction of arrow. (Refer to Fig. 1-6)
3) Remove the Gear FL cam ❷.

**Note** : When reinstalling be sure to reassemble Slider FL drive ❶ after you insert the Boss of Lever FL ARM-R in Groove of Slider Fl drive ❶.

**Assembly** : Align the Gear FL Cam ❶ with the Gear worm wheel Post as shown drawing.
(Refer to Timing point)

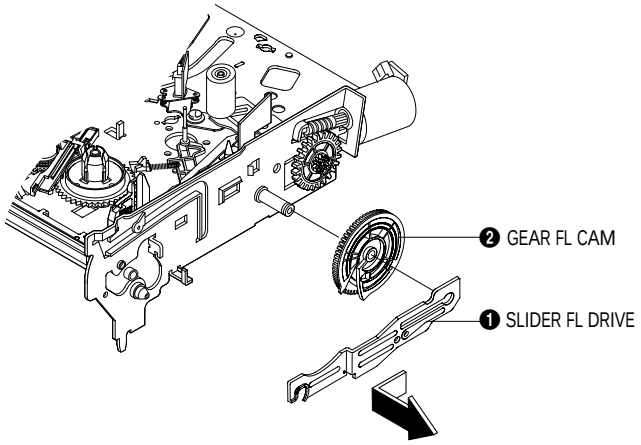



Fig. 1-6 Slider FL Drive Removal

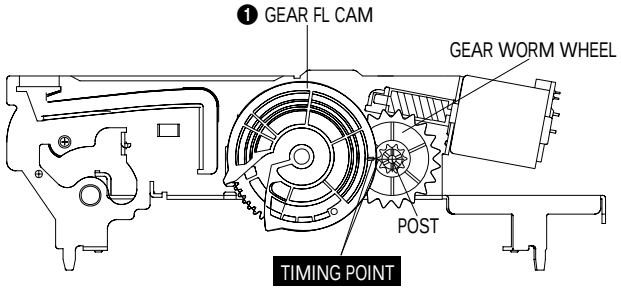



Fig. 1-7 Gear FL Cam, Gear Worm

### 1-2-4 Lever FL Arm Ass'y Removal

1) Push the hole "A" in the direction of arrow "B" use the pin.(about Dia.2.5)
2) Pull out the Lever FL Arm Ass'y ❶ from the Boss of Main Base.
3) Remove the Lever FL Arm Ass'y ❶ in the direction of arrow "C".

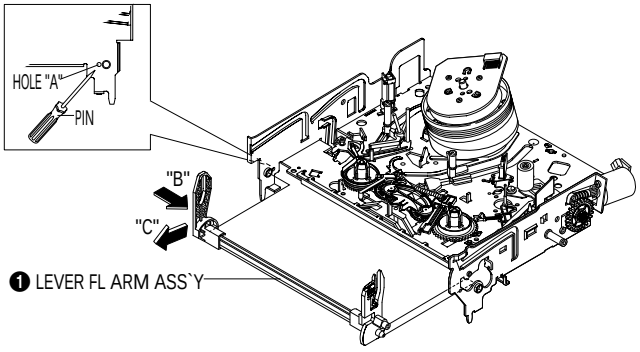



Fig. 1-8 Lever FL Arm Ass'y Removal

### 1-2-5 Gear Worm Wheel Removal

1) Remove the Gear Worm wheel ❶.

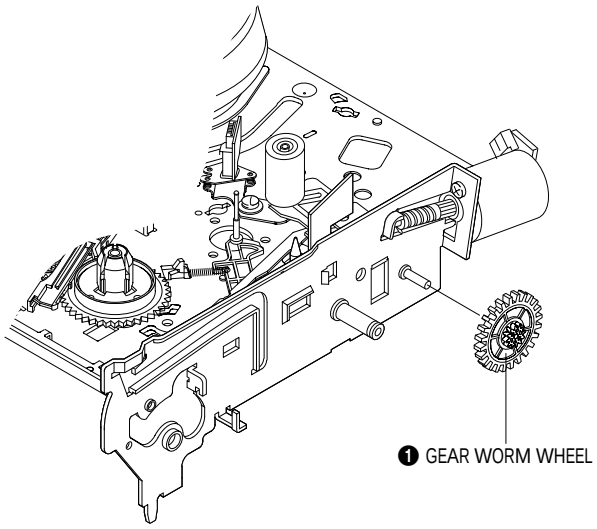



Fig. 1-9 Gear Worm Wheel Removal

### 1-2-6 Motor Loading Ass'y Removal

1) Remove the screw ❶.
2) Remove the Motor Loading Ass'y ❷.

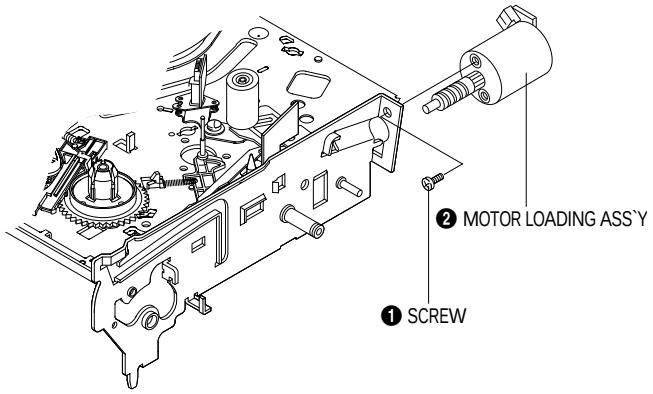



Fig. 1-10 Motor Loading Ass'y Removal

### 1-2-7 Bracket Gear, Gear Joint 2, 1 Removal

1) Remove the SCREW ❶.
2) Remove the Bracket Gear ❷.
3) Remove the Gear Joint 2 ❸.
4) Remove the Gear Joint 1 ❹.

**Assembly** :

1) Be sure to align dot mark of Gear Joint 1 ❶ with dot mark of Gear Joint 2 ❷ as shown Fig 1-12. (Refer to Timing point1)
2) Confirm the Timing Point 2 of the Gear Joint 2 ❷ and Slider Cam ❸.

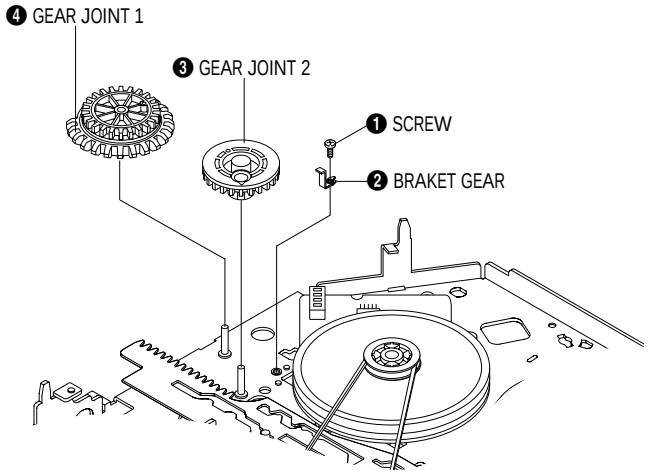



Fig. 1-11 Bracket Gear, Gear Joint 1,2 Removal

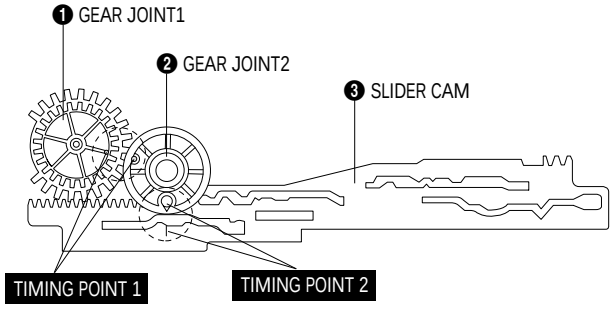



Fig. 1-12 Gear Joint 1,2 Assembly

### 1-2-8 Gear Loading Drive, Slider Cam, Lever Load S, T Ass'y Removal

1) Remove the Belt Pulley. (Refer to Fig. 1-30)
2) Remove the Gear Loading Drive ❶ after releasing Hook [A] in the direction arrow as shown in detail drawing.
3) Remove the Slider Cam ❷.
4) Remove the Lever Load S ❸, Link Load S ❺ & Lever Load T ❹, Link Load T ❻.

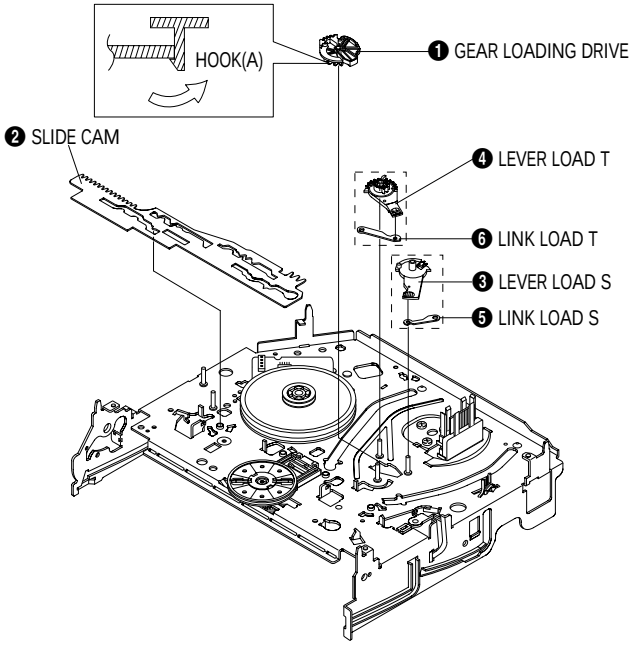



Fig. 1-13 Gear Loading Drive, Slider Cam, Lever T, S Load Ass'y Removal

### 1-2-9 Gear Loading Drive, Slider Cam, Lever Load S, T Ass'y Assembly

1) When reinstalling, be sure to align dot of Lever Load T Ass'y ❶ with dot of Lever Load S Ass'y ❷ as shown in drawing, (Refer to Timing Point 1).
2) Insert the Pin A,B,C,D into the Slider Cam ❸ hole,
3) Be sure to align dot of Lever Load T ❶ and dot of Gear Loading Drive ❹, (Refer to Timing Point 2).
4) Aline dot of Gear Loading drive ❹ with mark of Slider Cam ❸ as shown in drawing(Refer to Timing Point 3).

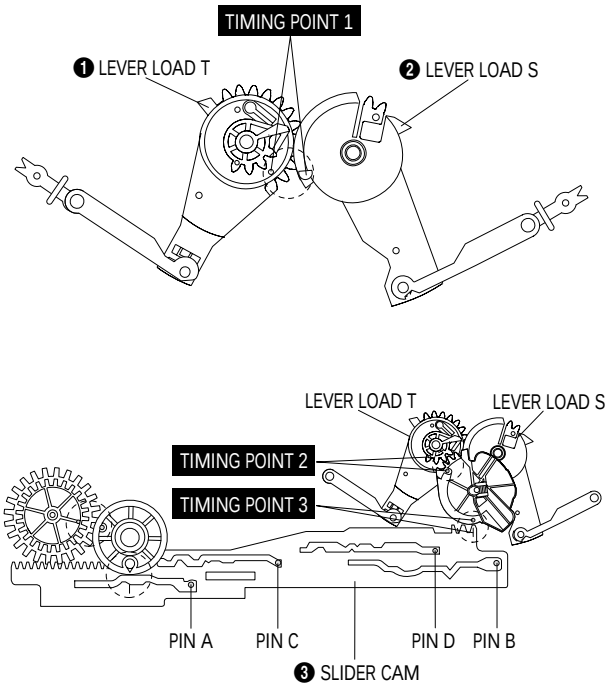



Fig. 1-14 Gear Loading Drive, Slider Cam, Lever Load S, T Ass'y Assembly

### 1-2-10 Lever Pinch Drive, Lever Tension Drive Removal

1) Remove the Lever Pinch Drive ❶, Lever Tension Drive ❷.

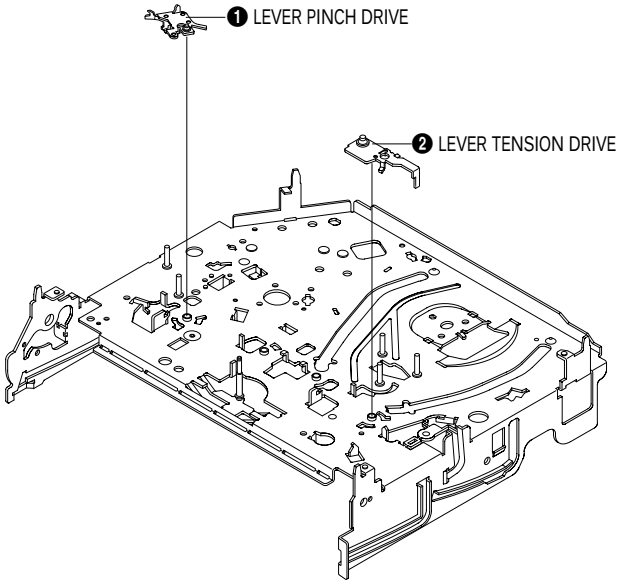



Fig. 1-15 Lever Pinch Drive, Lever Tension Drive Removal

### 1-2-11 Lever Tension Ass'y, Band Brake Ass'y Removal

1) Remove the Lever Brake S Ass'y (Refer to Fig 1-17).
2) Remove the Spring Tension Lever ❶.
3) Rotate stopper of Main Base in the direction of arrow "A".
4) Lift the Lever Tension Ass'y ❷ & Band brake Ass'y ❸.

**Note** :
1) When replacing the Lever Tension Ass'y ❷, be sure to apply Grease on the post,
2) Take care not to touch stain on the felt side, and not to be folder and broken Band brake Ass'y
3) After Lever Tension Ass'y seated, Rotate stopper of Main Base to the Mark[B].

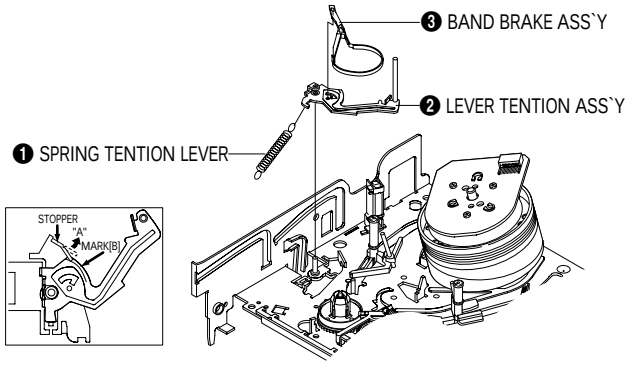



Fig. 1-16 Lever Tension Ass'y, Band Brake Ass'y Removal

### 1-2-12 Lever Brake S, T Ass'y Removal

1) Release the Hook [A] and the Hook [B], [C] in the direction of arrow as shown in Fig 1-17.
2) Lift the Lever S, T Brake Ass'y ❶, ❷ with spring brake ❸.

**Assembly** :
1)Assembly the Lever S Brake Ass'y ❶ on the Main Base.
2)Assembly the Lever T Brake Ass'y ❷ with spring brake ❸.

**Note** : Take extreme care not to be folded and transformed Spring Brake at removing or reinstalling.

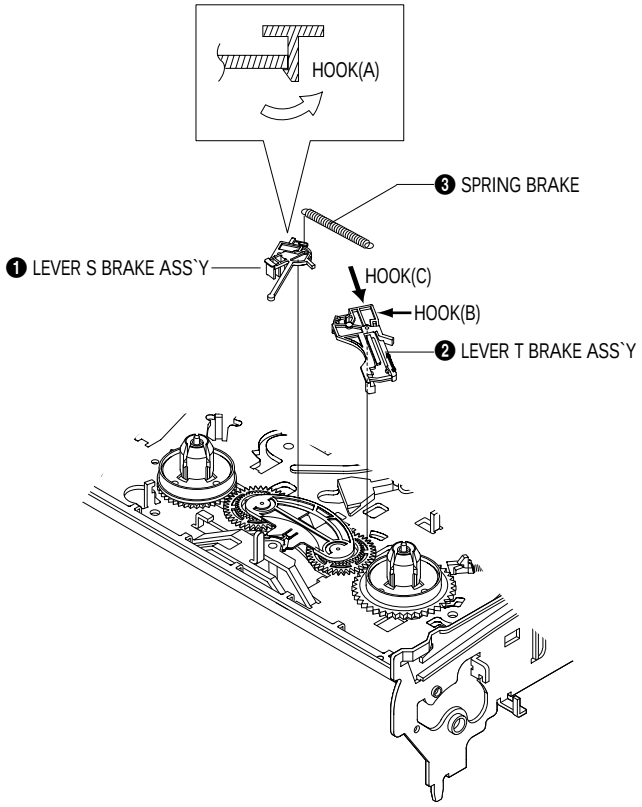



Fig. 1-17 Lever Brake S, T Ass'y Removal

### 1-2-13 Gear Idle Ass'y Removal

1) Push the Lever Idle ❶ in the direction of arrow "A", "B".
2) Lift the Lever Idle ❶.

**Assembly** :
1) Apply oil in two Bosses of Lever Idle ❶.
2) Assemble the Gear Idle ❷ with the Lever Idle ❶.

**Note** : When replacing the Gear Idle ❷, be sure to add oil in the boss of Lever Idle ❶.

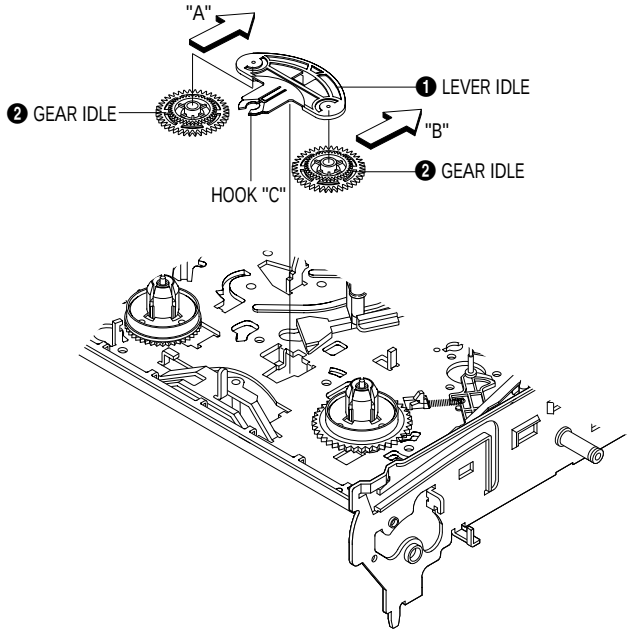



Fig. 1-18 Gear Idle Ass'y Removal

### 1-2-14 Disk S, T Reel Removal

1) Lift the Disk S, T Reel ❶, ❷.

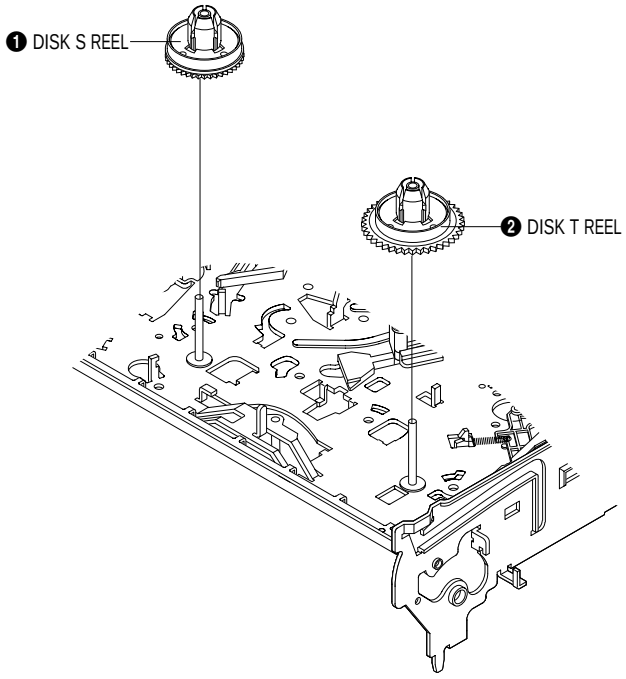



Fig. 1-19 Disk S, T Reel Removal

## 1-2-15 Holder Clutch Ass'y Removal

1) Remove the Washer Slit ❶.
2) Lift the Holder Clutch Ass'y ❷.

**Note** : When you reinstall Holder Clutch Ass'y
1) Check the condition of spring as shown in detail A.
2) Don't push Holder Clutch Ass'y down with excessive force Just insert Holder Clutch Ass'y into post center with dead force and Rotate it smoothly.
   Be sure to confirm that spring is in the slit of Gear Center Ass'y as shown in detail B.

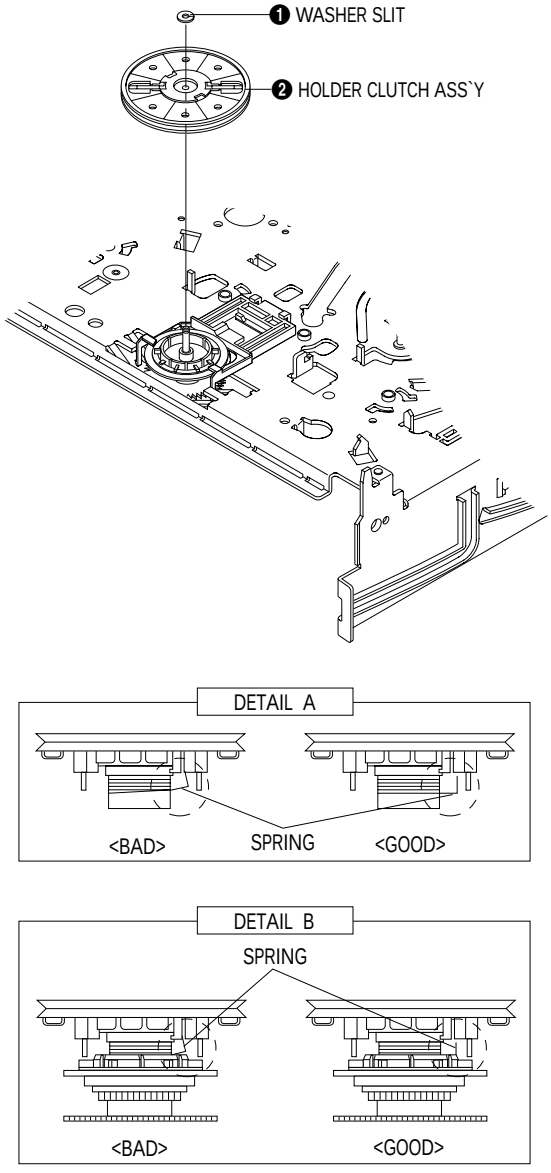



Fig. 1-20 Holder Clutch Ass'y Removal

## 1-2-16 Lever Up Down Ass'y, Gear Center Ass'y Removal

1) Remove the 2 hooks in the direction of arrow as shown Fig. 1-21 and lift the Lever Up Down Ass'y ❶.
2) Lift the Gear Center Ass'y ❷.

**Assembly** :
1) Insert the Lever Up Down Ass'y ❶ in the rectangular holes on Main Base as shown in Fig 1-22.
2) Lift the Lever Up Down Ass'y ❶ about 35 degree.(Refer to Fig 1-22)
3) Insert Ring of the Gear Center Ass'y ❷ in the Guide of the Lever Up Down Ass'y ❶.
4) Insert the Gear Center Ass'y ❷ in the post on Main Base.
5) Push down the Lever Up Down Ass'y ❶ for locking of the Hook.

**Note** :
1) Take care not to separate and sentence does not mark sense.
2) Be sure to confirm that Ring of the Gear Center Ass'y ❷ is in the Guide of the Lever Up Down Ass'y ❶ after finishing assembly of Lever Up

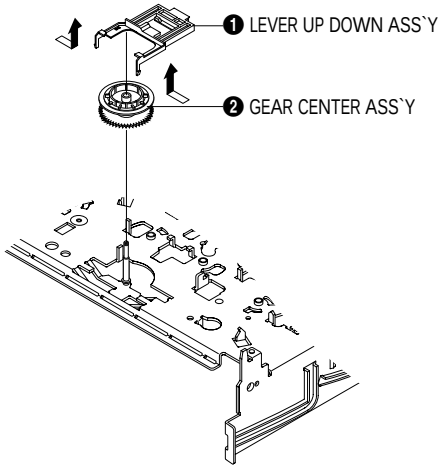



Fig. 1-21 Lever Up Down Ass'y Removal

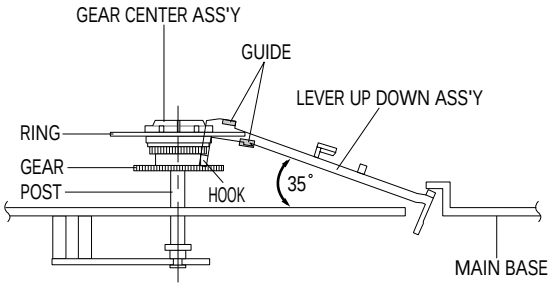



Fig. 1-22 Lever Up Down Ass'y Removal

### 1-2-17 Guide Cassette Door Removal

1) Lift the Hook [A].
2) Rotate the Guide Cassette Door ❶ in the direction of arrow.

**Note** : After reinstalling the Guide Cassette Door ❶ sure the Hook [A].

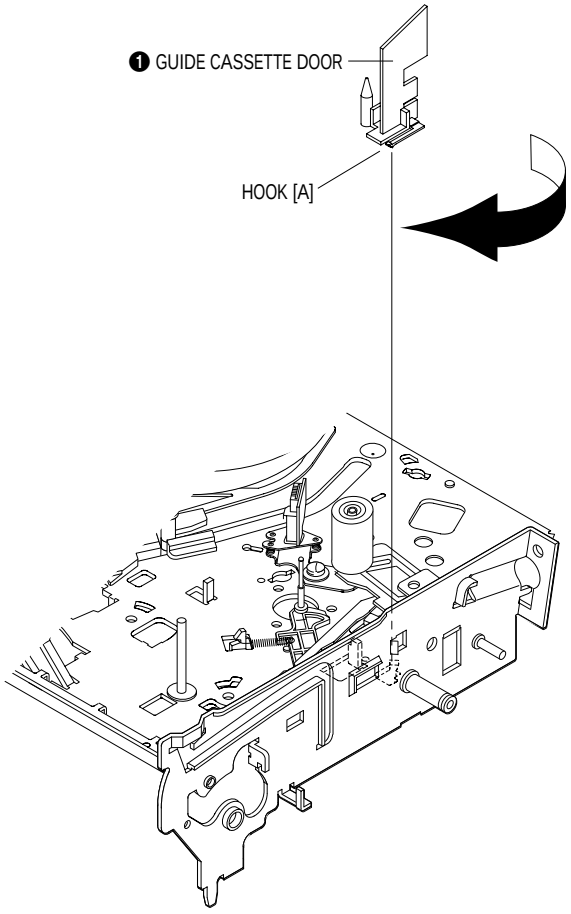



Fig. 1-23 Guide Cassette Door Removal

### 1-2-18 Lever Unit Pinch Ass'y, Plate Joint, Spring Pinch Drive Removal

1) Lift the Unit Pinch Ass'y ❶.
2) Remove the Plate Joint ❷ from Lever Pinch Drive.
3) Remove the Spring Pinch Drive ❸.

**Note** :
1) Take extreme care not to touch the grease on the Roller Pinch.
2) When reinstalling, be sure to apply grease on the post pinch roller.

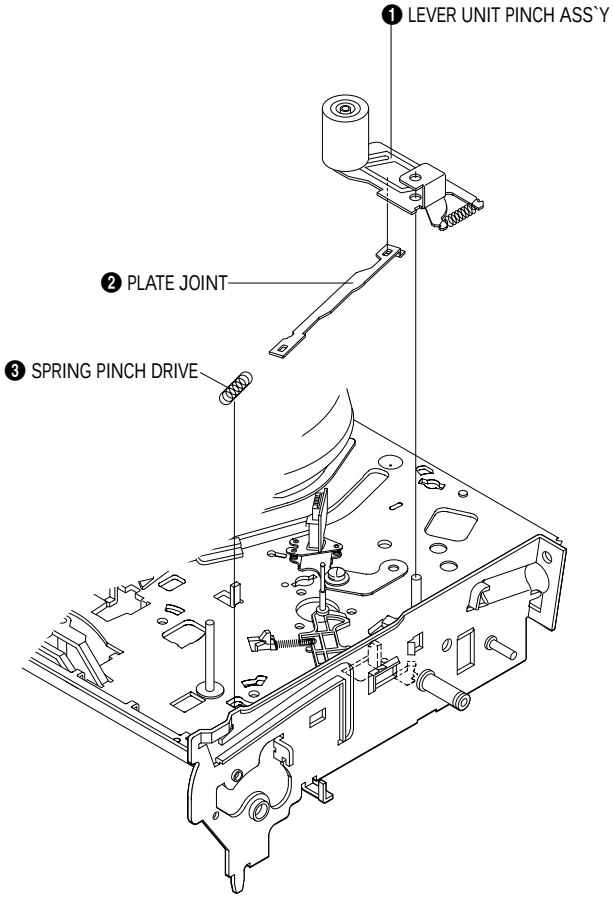



Fig. 1-24 Lever Unit Pinch Ass'y, Plate Joint, Spring Pinch Drive Removal

### 1-2-19 Lever #9 Guide Ass'y Removal

1) Remove the Spring #9 Guide ❶.
2) Lift the Spring #9 Guide Ass'y ❷ in the direction of arrow "A".

**Note** :
1) Take extreme care not to get grease on the tape Guide Post.
2) After reinstalling, check the bottom side of the Post #9 Guide to the top side of Main Base.

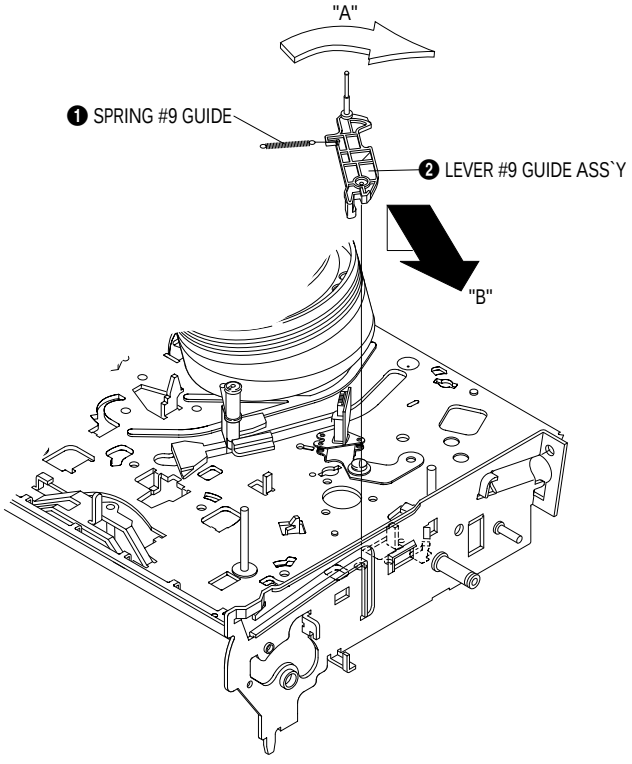



Fig. 1-25 Lever #9 Guide Ass'y Removal

### 1-2-20 FE Head Removal

1) Remove the screw ❶.
2) Lift the FE Head ❷.

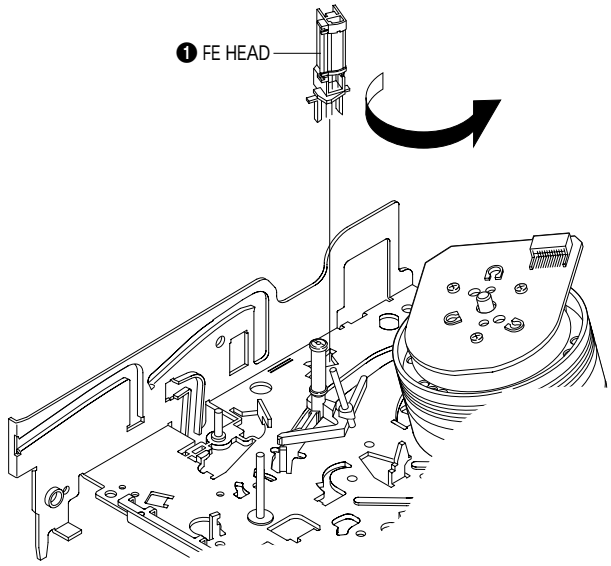



Fig. 1-26 FE Head Removal

### 1-2-21 ACE Head Removal

1) Pull out the FPC from connector of ACE Head Ass'y ❷.
2) Remove the screw ❶.
3) Lift the ACE Head Ass'y ❷.

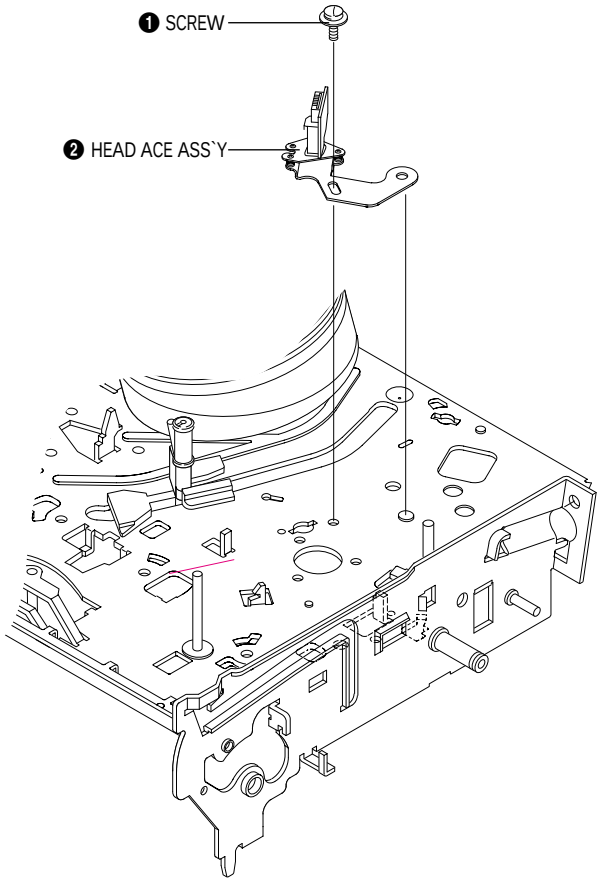



Fig. 1-27 ACE Head Removal

### 1-2-22 Slider S, T Ass'y Removal

1) Move the Slider S, T Ass'y ❶, ❷ to slot, and then lift it to remove. (Refer to arrow)

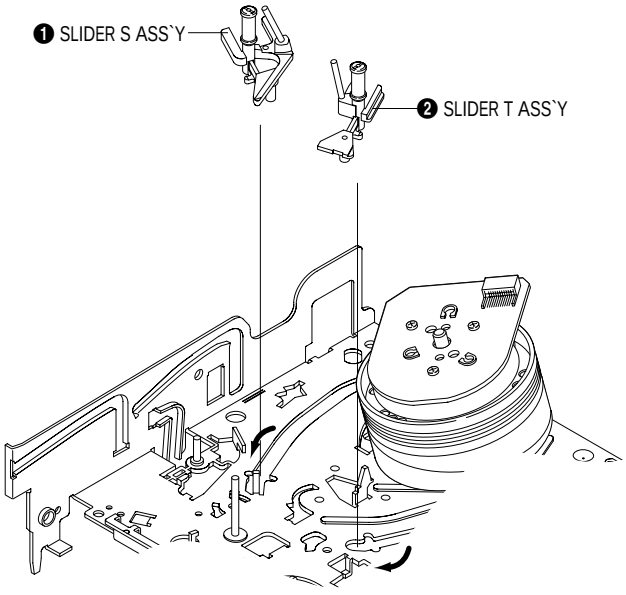



Fig. 1-28 Slider S, T Ass'y Removal

### 1-2-23 Plate Ground Deck, Cylinder Ass'y Removal

1) Remove the 3 Screws ❶.
2) Lift the Plate Ground Deck ❷.
3) Lift the Cylinder Ass'y ❸.

**Assembly** :
1) Match the 3 holes in the bottom of Cylinder ass'y ❸ to the 3 holes of Main Base as attending not to drop or knock the Cylinder ass'y ❸.
2) Tighten the 1 Screw ❶.
3) Match the Plate Ground Deck ❷ to the Hole of Base Main.
4) Tighten the other 2 Screws ❶.

**Note** :
1) Take care not to touch the Cylinder Ass'y ❸ and the tape guide post at reinstalling.
2) When reinstalling, Don't push down too much on Screw Driver.

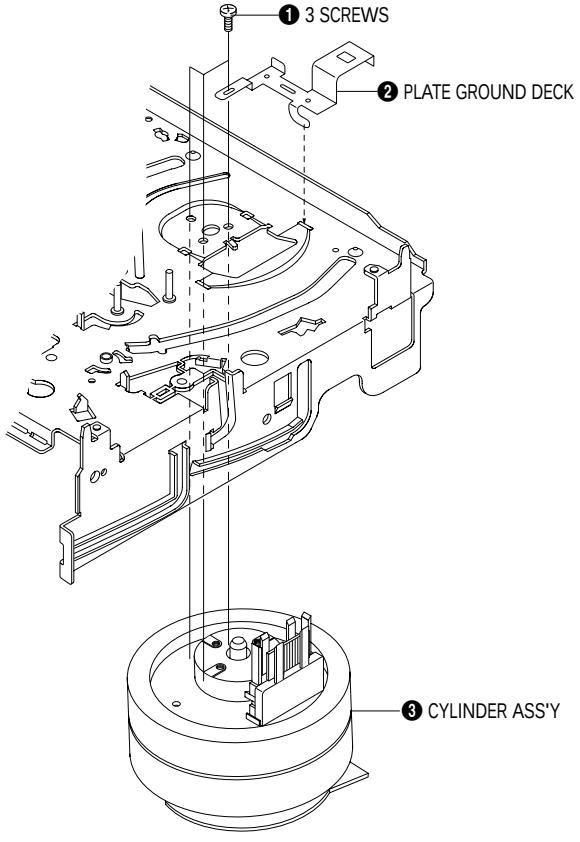



Fig. 1-29 Plate Ground Deck, Cylinder Ass'y Removal

### 1-2-24 Belt Pulley Removal

1) Remove the Belt Pulley ❶.

**Note** : Take extreme care not to get grease on Belt Pulley ❶ at assembling or reassembling.

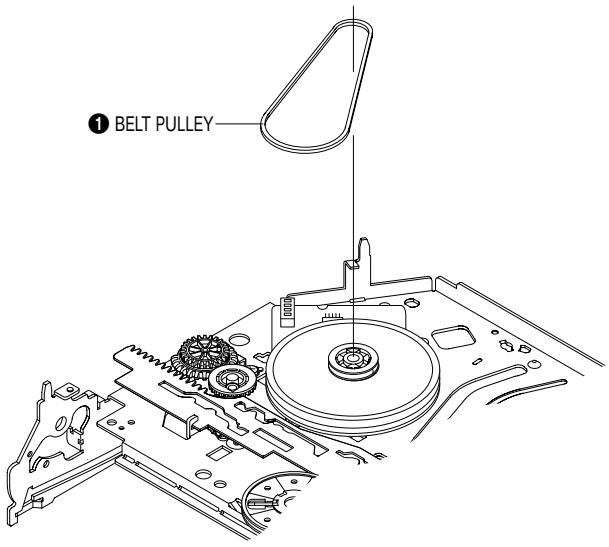



Fig. 1-30 Belt Pulley Removal

### 1-2-25 Level Head Cleaner Ass'y Removal

1) Release the Hook ❶.
2) Lift the Lever Head Cleaner Ass'y ❷.

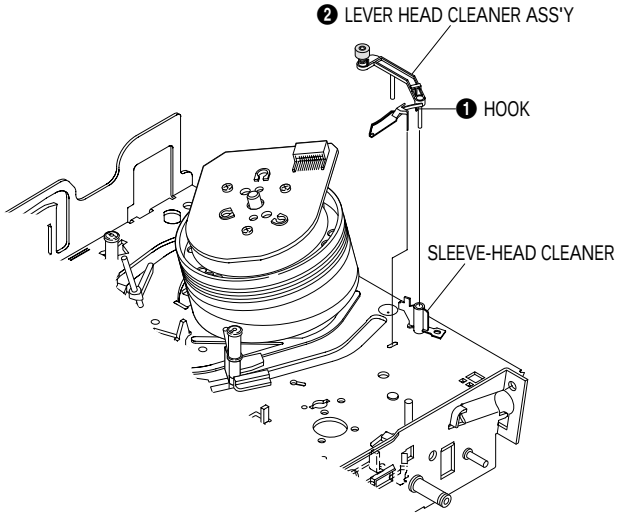



Fig. 1-31 Level Head Cleaner Ass'y Removal

## 1-2-26 Damper Capstan, Motor Capstan Ass'y Removal

1) Remove the Damper Capstan ❶ in the direction of arrow.
2) Remove the 3 Screws ❷.
3) Remove the Motor Capstan Ass'y ❸.

**Assembly** :

1) Match the 3 holes of Motor Capstan Ass'y ❸ to the 3 holes of Main Base. Be careful not to drop or knock the Motor Capstan Ass'y ❸.
2) Tighten the 3 Screws ❷ in the direction of arrow as shown detail drawing.
3) Assemble the Damper Capstan ❶.

**Note** : After tightening screws, check if there is gap between the head of screws and the top side of Main Base. There should have no gap between the head of screws and the top side of Main Base.
After reinstalling, adjusting the tape transport system again.

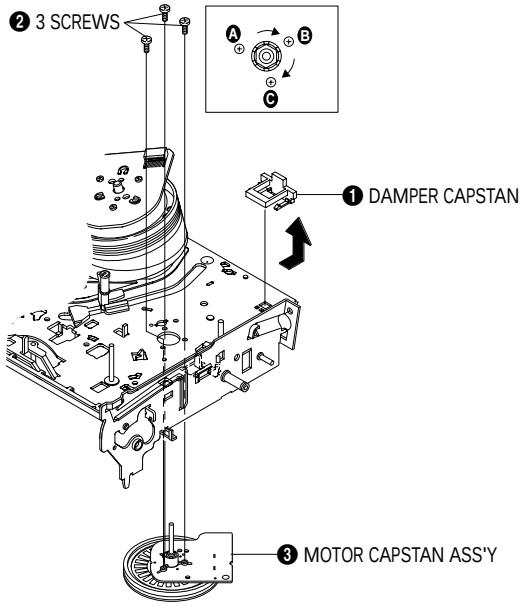



Fig. 1-32 Damper Capstan,Motor Capstan Ass'y Removal

## 1-2-27 How to Eject the Cassette Tape (If the unit does not operate on condition that is inserted into housing ass'y)

1) Turn the Gear worm ❶ clockwise with screw driver. (Refer to arrow)
(Other method : Remove the Screw of Motor Load Ass'y, Separate the Motor Load Ass'y)

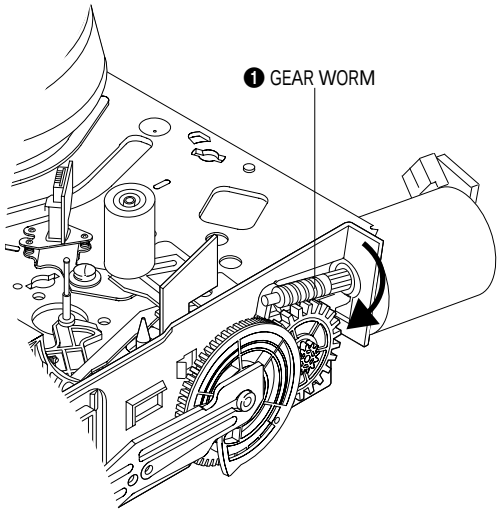



Fig. 1-33

2) When Slider S,T are approched in the position of unloading, rotate holder Clutch counterclockwise after inserting screw driver in the hole of frame's bottom in order to wind the unwinded tape. (Refer to Fig.1-34)
(If you rotate Gear Worm ❶ continuously when tape is in state of unwinding, you may cause a tape contamination by grease and tape damage. Be sure to wind the unwinded tape in the state of set horizontly.)
3) Rotate Gear Worm ❶ clockwise using screw driver again up to the state of eject mode and then pick out the tape.(Refer to Fig.1-33)

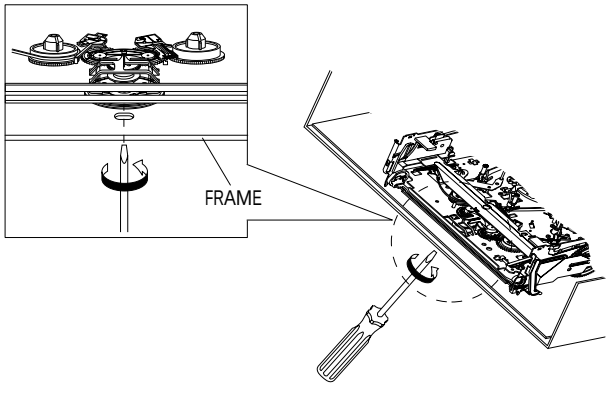



Fig. 1-34

## 1-3 The table of clearing, Lubrication and replacement time about principal parts

1) The replacement time of parts is not life of parts.
2) The table 1-1 is that the VCR Set is in normal condition (normal temperature, normal humidity).
   The checking period may be changed owing to the condition of use, runtime and environmental conditions.
3) Life of the Cylinder Ass'y is depend on the condition of use.
4) See exploded view for location of each parts.

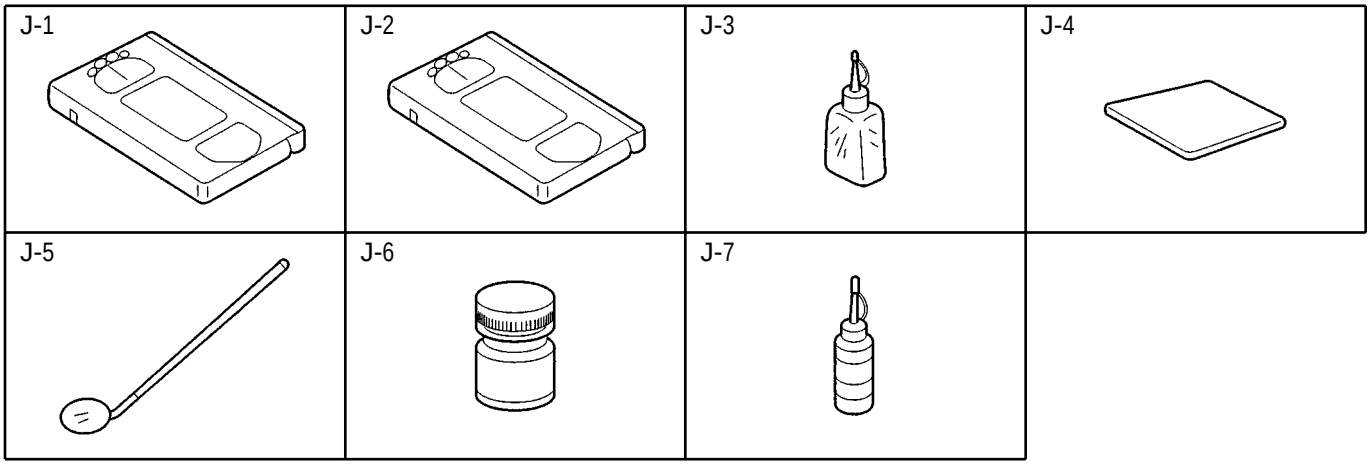
<Table 1-1>

| * | Parts Name | Checking Period | | | | | | | | | | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 500 | 1000 | 1500 | 2000 | 2500 | 3000 | 3500 | 4000 | 4500 | 5000 | |
| TAPE PATH SYSTEM | POST TENSION | Δ | Δ | Δ | Δ | Δ | Δ | Δ | Δ | Δ | Δ | - To clean the parts, use patch and alcohol (solvent).<br>- After cleaning, use the video tape after alcohol is gone away completely.<br>- We recommend to use oil [NT-68] or solvent.<br>- One or two drops of oil should be applied after cleaning with alcohol. |
| | SLANT POST S, T | Δ | Δ | Δ | Δ | Δ | Δ | Δ | Δ | Δ | Δ | |
| | #8 GUIDE SHAFT | Δ | Δ | Δ | Δ | Δ | Δ | Δ | Δ | Δ | Δ | |
| | CAPSTAN SHAFT | Δ | Δ | Δ | Δ | Δ | Δ | Δ | Δ | Δ | Δ | |
| | #9 GUIDE POST | Δ | Δ | Δ | Δ | Δ | Δ | Δ | Δ | Δ | Δ | |
| | #3 GUIDE POST | Δ | Δ | Δ | Δ | Δ | Δ | Δ | Δ | Δ | Δ | |
| | GUIDE ROLLER S, T | Δ | Δ | Δ | O | O | O | O | O | O | O | |
| | CYLINDER ASS'Y | Δ | O | O | O | O | O | O | O | O | O | |
| | FE HEAD | Δ | Δ | Δ | O | O | O | O | O | O | O | |
| | ACE HEAD | Δ | O | O | O | O | O | O | O | O | O | |
| | PINCH ROLLER | Δ | O | O | O | O | O | O | O | O | O | |
| | POST REEL S, T | | ◆ | | ◆ | | ◆ | | ◆ | | ◆ | - Periodic time of applying oil (Apply oil after cleaning)<br>- The excessive applying oil may be the cause of malfunction. |
| | SLEEVE TENSION | | ◆ | | ◆ | | ◆ | | ◆ | | ◆ | |
| | POST CENTER | | ◆ | | ◆ | | ◆ | | ◆ | | ◆ | |
| | LEVER IDLE BOSS (2Point) | | ◆ | | ◆ | | ◆ | | ◆ | | ◆ | |
| DRIVING SYSTEM | CAPSTAN MOTOR PULLEY | Δ | Δ | Δ | Δ | Δ | O | O | O | O | O | |
| | BELT PULLEY | | | | O | O | O | O | O | O | O | |
| | HOLDER CLUTCH ASS'Y | Δ | O | O | O | O | O | O | O | O | O | |
| | GEAR CENTER ASS'Y | | O | O | O | O | O | O | O | O | O | |
| | GEAR IDLE (2Point) | | O | O | O | O | O | O | O | O | O | |
| | LOADING MOTOR | | O | O | O | O | O | O | O | O | O | |
| BRAKE SYSTEM | BAND BRAKE ASS'Y | | O | O | O | O | O | O | O | O | O | |
| | BRAKE T ASS'Y | | O | O | O | O | O | O | O | O | O | |

Δ : Cleaning  O : Check and replacement in necessary  ◆ : Add Oil

## 1-4 Tools and fixtures reguired for service

| Ref. No. | Name | | Part No. | Caved Jig No. | Remarks |
|---|---|---|---|---|---|
| J-1 | Torque Measurement Cassette VHT-103S | | J-6090-072-A | | For FWD & back tension torque measurement |
| | Torque Measurement Cassette VHT-404S | | J-6082-012-A | | For CUE and REVIEW torque measurement |
| J-2 | Alignment Tape | KRV-52NE (NTSC) | 8-192-605-41 | | Tape path, Audio azimuth, X-value adjustments |
| | | KRV-51N2 (NTSC) | 8-192-605-32 | | Electrical adjustments, Operation check |
| | | KRV-52PL (PAL) | 8-192-605-46 | | Tape path, Audio azimuth, X-value adjustments |
| | | KRV-51P (PAL) | 8-192-605-36 | | Electrical adjustments, Operation check |
| J-3 | Cleaning Fluid | | Y-2031-001-0 | — | |
| J-4 | Chamois Leather | | 2-034-697-00 | — | |
| J-5 | Dental Mirror (with Handle) | | J-6080-029-A | SL-5052 | Tape path and tape traveling adjustments or checks |
| | Dental Mirror (Mirror) | | J-6080-030-1 | | |
| J-6 | Grease Molykote EM 30LG | | J-6090-014-A | | Net. 20 g |
| J-6 | Diamond Oil NT-68 | | 7-661-018-18 | | |




<Fig 1-35>

# 2. Alignment and Adjustment

## 2-1 Tape Transport System and Adjustment Locations

The tape transport system has been adjusted precisely in the factory. Alignment is not necessary except for the following :
1) Noise observed on the screen.
2) Tape damage.
3) Parts replacement in the tape transport system.

Lower flange height of tape guide is used as the reference for the transport adjustment.
To maintain the height of the tape guide and prevent damage, do not apply excessive force onto the main base.

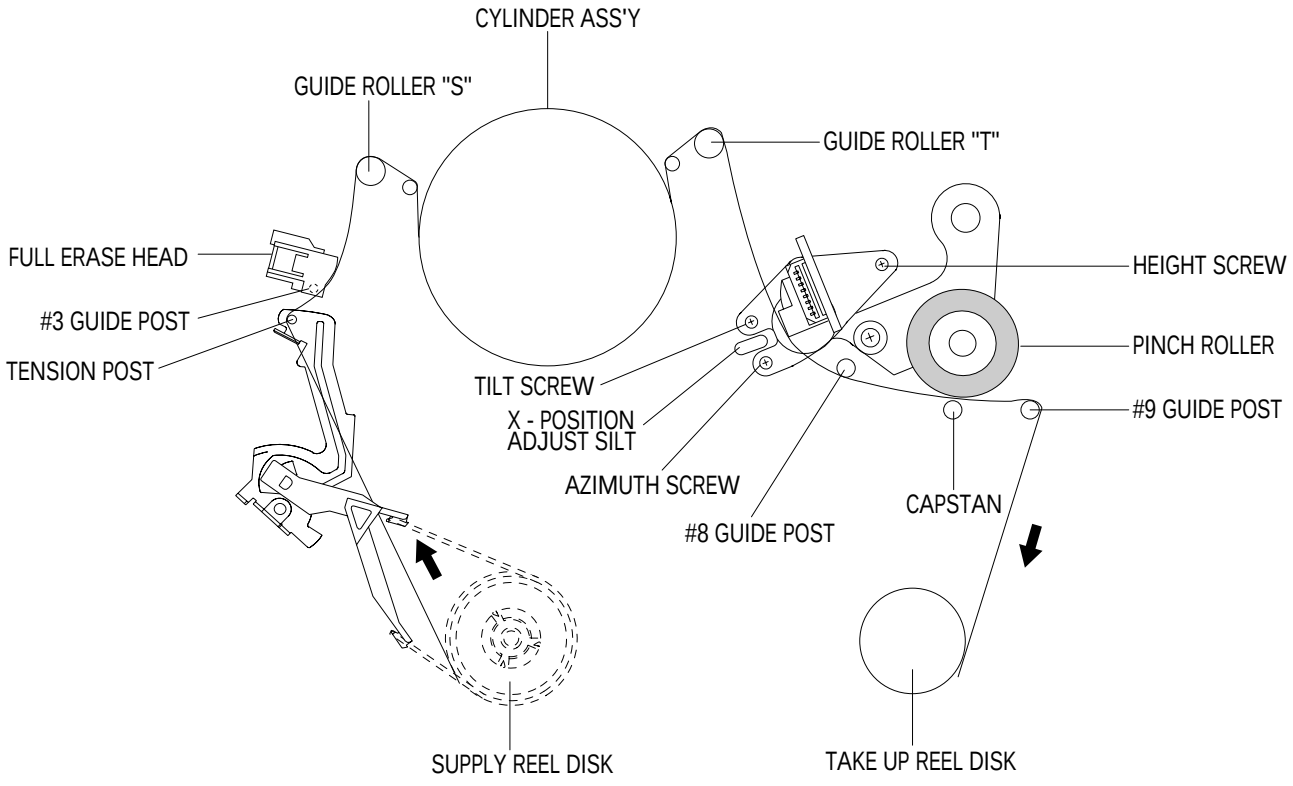



Fig. 2-1 Location of Tape Transport Adjustment

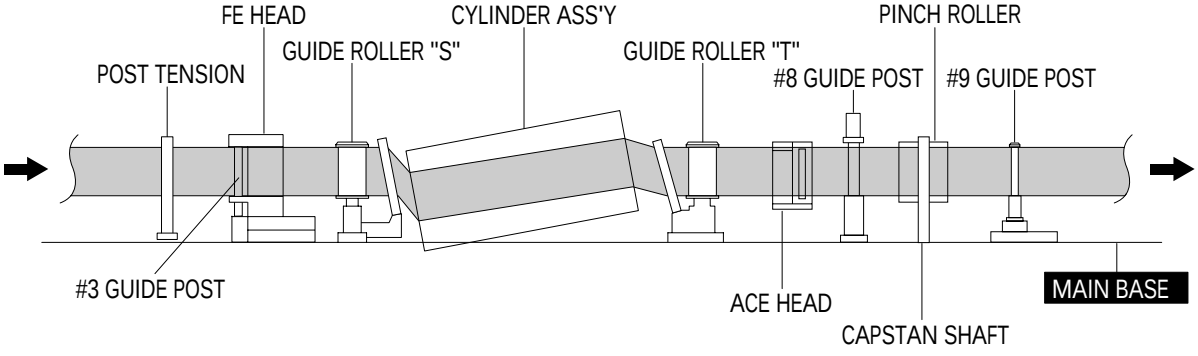



Fig. 2-2 Tape Travel Diagram

## 2-2 Tape Transport System Adjustment

When parts are replaced, perform the required adjustments by referring to procedures for the tape transport system. If there are any changes to the tape path, first run a T-120 tape and make sure excessive tape wrinkle does not occur at the tape guides.

1) If tape wrinkle is observed at the guide roller S, T, turn the guide roller S, T until wrinkle disappears.
2) If the tape wrinkle is still observed at the tape guide, perform the tilt adjustment of the ACE head. (See page 5-3 of the Service Manual for Test Point Locations.)

### 2-2-1 ACE Head Assembly Adjustment

2-2-1(a) ACE HEAD HEIGHT ADJUSTMENT

1) Run the alignment tape (KRV-52NE (NTSC) / 52PL (PAL)) in the playback mode.
2) Observe surface of the audio head using a dental mirror.
3) Turn screw (C) clockwise or counterclockwise until the gap of lower tape edge and the lower edge of the control head is about 0.25mm. (Refer to Fig. 2-3 and 2-4)

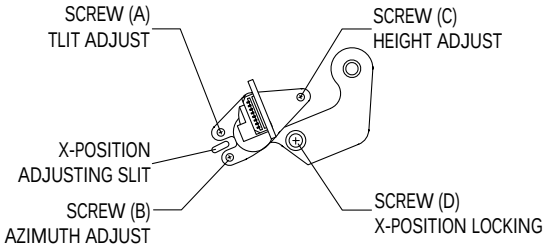



Fig. 2-3 Location of ACE Head Adjustment Screw

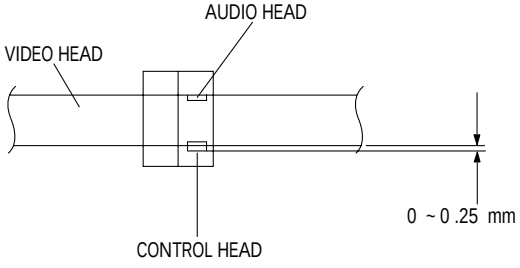



Fig. 2-4 ACE Head Height Adjustment

2-2-1(b) ACE HEAD TILT ADJUSTMENT

1) Playback a blank tape and observe the position of the tape at the lower flange of tape guide.
2) Confirm that there is no curl or wrinkle at the lower flange of tape guide as shown in Fig. 2-5 (B).
3) If a curl or wrinkle of the tape occurs, slightly turn the screw (A) tilt adjust on the ACE head ass'y.
4) Reconfirm the ACE head height.

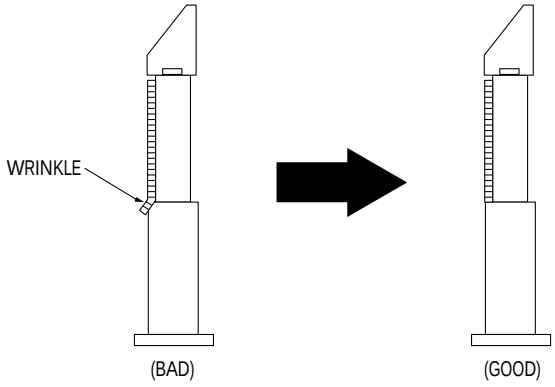



Fig. 2-5 Tape Guide Check

2-2-1(c) AUDIO AZIMUTH ADJUSTMENT

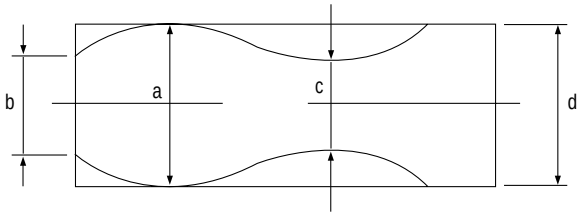
1) Load alignment tape (KRV-52NE (NTSC) / 52PL (PAL)) and playback the NTSC : 5KHz (PAL : 4KHz) signal.
2) Connect channel-1 scope probe to audio output test point.
3) Adjust screw (B) to achieve maximum audio level. (See Fig. 2-3)

2-2-1(d) ACE HEAD POSITION (X-POINT) ADJUSTMENT

1) See "2. Alignment and Adjustment" for ACE Head position (X-Point) adjustment.

## 2-2-2 Linearity Adjustment (Guide roller S, T adjustment)

1) Playback the alignment tape (KRV-51N2 (NTSC)/51P (PAL)) (SP mode, Mono Scope).
2) Observe the video envelope signal on an oscilloscope (triggered by the video switching pulse).
3) Make sure the video envelope waveform (at its minimum) meets the specification shown in Fig. 2-6.
   If it does not, adjust as follows :




a b c d
c,b,d/a ≧63%

Fig. 2-6 Envelope Waveform Adjustment

**Note :**
a=Maximum output of the video RF envelope.
b=Minimum output of the video RF envelope at the entrance side.
c=Minimum output of the video RF envelope at the center point.
d=Maximum output of the video RF envelope at the exit side.

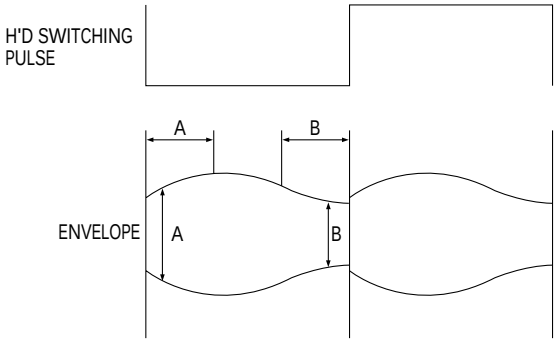



Fig. 2-7 Adjustment Points

4) If the section A in Fig. 2-7 does not meet the specification, adjust the guide roller S up or down.
5) If the section B in Fig. 2-7 does not meet the specification, adjust the guide roller T up or down.
6) Play back the alignment tape (SP mode, Mono Scope).
7) Connect an oscilloscope CH-1 to the Envelope and CH-2 to the H'D SW Pulse for triggering.
8) Turn the guide roller heads with a flat head ( ) driver to obtain a flat video RF envelope as shown in Fig. 2-8.

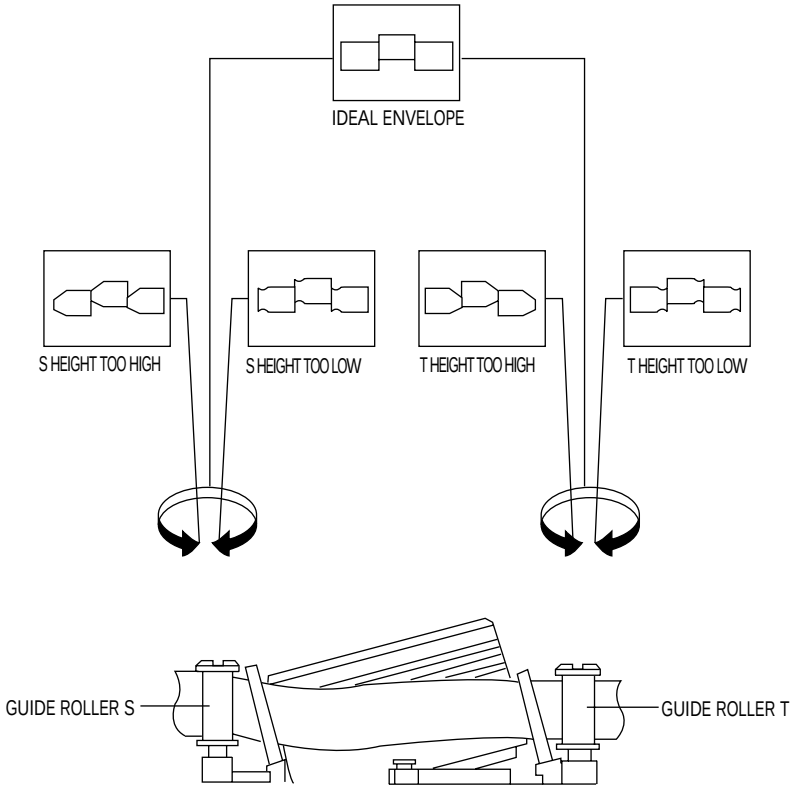



Fig. 2-8 Guide Roller S, T Height Adjustment

### 2-2-3 Check Transitional Operation from RPS to Play

Check transition from RPS mode to play mode :
Using a pre-recorded SP tape, make sure the entry side of envelope comes to an appropriate steady state within 3 seconds (as shown in Fig. 2-9).
If the envelope waveform does not reach specified peak-to peak amplitude within 3 seconds, adjust as follows :

1) Make sure there is no gap between the supply roller lower flange and the tape.
   If there is a gap, adjust the supply guide roller again.
2) Change operation mode from the RPS to the play mode (again) and make sure the entry side of envelope rises within 3 second.

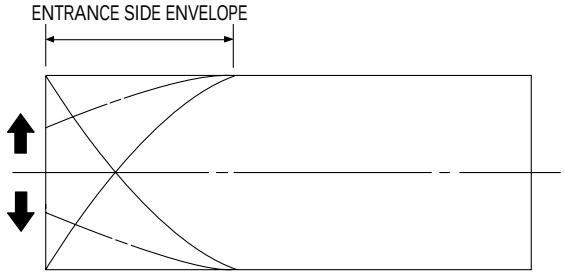



Fig. 2-9 Video Envelope Rising when Operation mode Changes from RPS to Play Mode

### 2-2-4 Envelope Check

1) Make recordings on T-120 (E-120) and T-160 (E-180) tape.
   Make sure the playback output envelope meets the specification as shown in Fig. 2-10.
2) Play back a self recorded tape (recording made on the unit using with T-120 (E-120).
   The video envelope should meet the specification as shown in Fig. 2-10.
   In SP mode, (A) should equal (B).
   If the head gap is wide, upper cylinder should be checked.

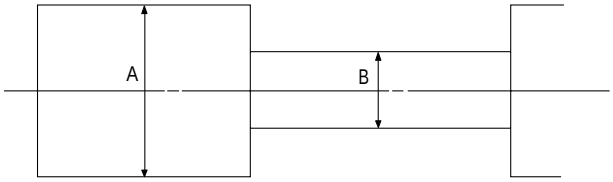



Fig. 2-10 Envelope Output and Output Level

### 2-2-5 Tape Wrinkle Check

1) Run the T-160 (E-180) tape in the playback, FPS, RPS and Pause modes and observe tape wrinkle at each guide.
2) If excessive tape wrinkle is observed, perform the following adjustments in Playback mode :

◆ Tape wrinkle at the guide roller S, T section :
Linearity adjustment.
◆ Tape wrinkle at tape guide flange :
ACE head assembly coarse adjustment.

## 2-3 Reel Torque

1) The rotation of the capstan motor causes the Holder Clutch Ass'y to rotate through the Belt Pulley.
2) The spring wrap PLAY/REV of holder clutch ass'y drives the disk reel S, T through gear idle by rotation of gear center ass'y.
3) Brake is operated by slider cam at FF/REW mode.
4) Transportation of accurate driving force is done by gears. (Gear Center Ass'y)

**Note :** If the spec. does not meet the followings specifications, replace the holder clutch ass'y and then recheck.

<Table 2-1>

| MODE | TORQUE g/cm | GAUGE |
|---|---|---|
| PB | 42 ± 11 | Cassette Torquemeter |
| RPS | 145 ± 30 | Cassette Torquemeter |

9-921-790-11

**Sony Corporation**
**Network Entertainment Group**



2001A1600-1
© 2001.1
**Published by Quality Assurance Dept.**